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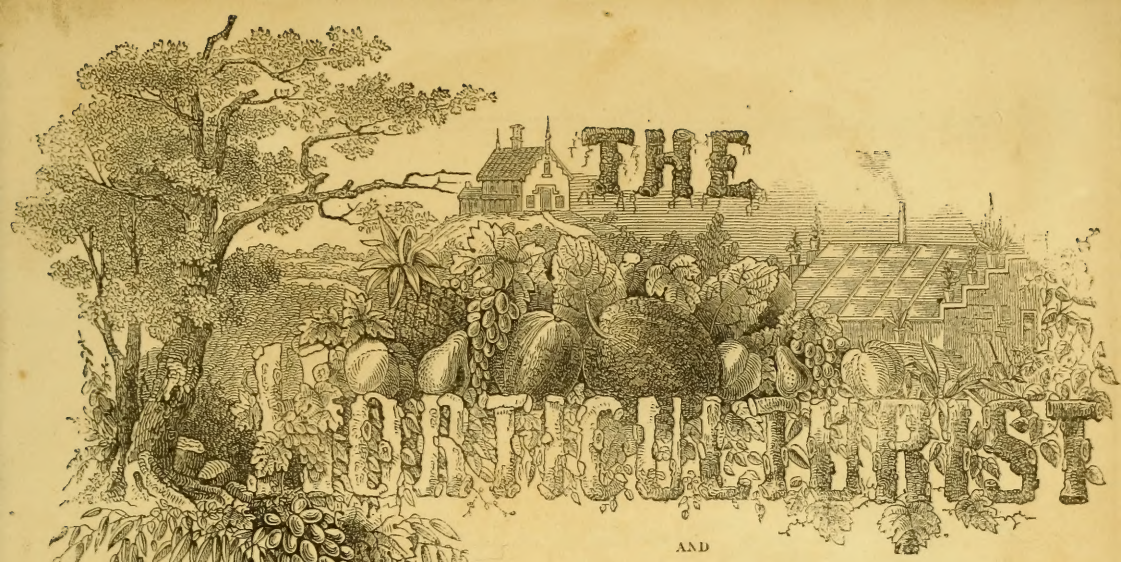


HYBRID PERPETUAL.

Lord Raglan.

for THE HORTICULTURIST,

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AND

JOURNAL

OF

Rural Art and Rural Taste.

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BRIEF REMARKS ON PLANT-HOUSES.

BY WM. CHORLTON.

As the various plant-houses are in active operation at this time of year, a few general remarks regarding them may be of service.

There are several kinds of structures required where artificial plant-growing is attempted in anything like perfection, or extent of collection; and although, as a general thing, a great diversity of form is not necessary, it has to some extent its advantages. Compact and not large compartments, well-built, close-jointed, and tightly-glazed houses are indispensable where the best culture is expected. Shelter from cold winds and the changeable drafts of our fickle climate, is also of importance; but this shelter should be some distance from the building, that there may be no shade caused thereby, nor the purity of the surrounding atmosphere interfered with. No plants will assimilate the necessary elements or food sufficiently to support healthy growth, and more particularly the flowering and fruiting processes, without an abundance of light; consequently the greatest regard should be paid to this point. We always find double span houses, where the plants are near the glass, and the light can reflect all around, grow the best specimens, and produce the greatest amount of flowers with brilliancy of color. Owing to our perverse climate, however, it is not always practicable to employ such unless they be sunk somewhat below the surrounding level, on account of the influence of our dry and frigid winds, and the extra amount of artificial heat (which at all times is only a necessary evil) that is required to raise the temperature to the desired height, and followed by a corresponding dryness of atmosphere, unless a large quantity of water is flooded around.

The different houses in use for ornamental plants are technically known as Cold Pit, Forcing Pit, Greenhouse, Intermediate House or Warm Greenhouse, Conservatory, and Stove; and this last may be subdivided into Moist and Dry.

The *Cold Pit* is merely a preservatory for those plants which need to be protected from severe frost, without the expectation of flowers through the winter. It ought to be built below the ground level, or else a thick bank of turf placed all around the outside up to the top, which is composed of sashes supported on rafters fixed into a framework of timber. Such a house will answer for Camellias, the tender Roses, Violets, Acacias, Oleanders, Myrtles, Laurustinus, Verbenas, Scarlet Geraniums, and many of the general bedding-out plants; but it ought to be understood that a comparative reduction of water at the roots, and also in the atmosphere, should be maintained in accordance with the hibernation of the inmates.

The *Greenhouse* is expected to furnish flowers at all times of the year, and also keep the plants in health and a growing condition; which, of course, makes it the most generally needed, and when only *one* is desired, this is that one if flowers are to be produced in the winter season. Artificial heat is required in this house, but the temperature may always be kept low in the night-time. The general range may be from 40° to 45° in the night, with a rise to 60° or 70° with sunlight. Light ought to be a first consideration in this house, and as a very high temperature is not desirable, the double span may be adopted in all cases. In connection with this, the Warm Greenhouse becomes a part, the only difference being, that a temperature from

five to ten degrees higher should be maintained. This, however, makes a large item in the extra variety of plants that may be cultivated with satisfaction, and the production of a considerably greater quantity of flowers. Where the means are limited, it will always give greater satisfaction to have a division in the centre of the house, from front to back, and the heating apparatus so arranged that one or both apartments may be worked at pleasure. Even on the smallest scale this can be accomplished, and a trifling mechanical ingenuity only is required to carry out the suggestion. Among the plants which may be grown and bloomed in the winter, in this arrangement, are the many varieties of Camellia, Erica, Pelargonium, Abutilon, Acacia, Azalea, Burchellia, Fuchsia, Cytisus, Heliotrope, Roses, Habrothamnus, Melaleuca, Poinsettia, Begonia, Bignonia, Salvia, Rhododendron, Mignonnette and many other annuals, particularly those from California and Australia, Oranges, Cape Jasmines (Gardenia), Kennedya, Jasminum, Bouvardia, many of the Orchids, besides others, of which this list is only a tithe.

The *Conservatory.* In this house the plants are generally planted out either in beds on the ground level, or artificially arranged mounds and rock or rustic work, with climbing vines suspended from the roof and upper parts. It may, in fact, be considered as a tropical forest in miniature, with the advantage of greater variety than would be found in any native locality, and the pleasure of seeing, at one view, the most beautiful vegetable productions of the warm regions of both hemispheres growing in their natural luxuriance. This house ought to be the grandest feature in any ornamental plant establishment, combining architectural nobleness, unity of appearance with the mansion, and intelligent arrangement in every detail ; consequently, where the whole of this cannot be carried out, it is better to be content with structures of more practical utility.

The *Stove.* The Plant Stove is an accommodation for intertropical plants, the real beauty of which far excels those of cooler regions ; and, as this structure is destined for the culture of such plants as grow in climates that are continually warm, a greater command of heat is necessary than is sufficient for the ordinary greenhouse, the inmates of which are not injured even though the thermometer should sink occasionally near to the freezing point. We may admit that there are many plants indigenous near the equator that will flourish, and only require protection, in the winter, from extreme frost; but such are, without exception, from elevated table lands, or high up in the mountains, where the temperature is very different from what it is near the level of the sea. By stove plants, then, is meant those which are naturally found in the lower tropical regions, where an even and high average temperature prevails throughout the year. If we take, for example, that part of the Indian Archipelago, from which many of our finest stove plants have been brought, we find that the extreme range throughout the year does not differ in the shade more than about 15°, and exposed to radiation only amounts to some 25°, and as the highest seldom exceeds 86° and the lowest 60°, we have a good index for the extremes that may be safely accepted in the Plant Stove. So far of artificial heat and a general temperature ; but we may make some exception in the case of sunshine during the summer months, when the thermometer may be allowed to rise to 95° with benefit. It will be readily seen then, from this, what is the main difference between the Stove and Greenhouse, in one or the other of which may be grown suc-

cessfully all plants that may be introduced, and are too tender for outdoors in our northern climate. The following genera are a few that are suitable for this department: Torenia, Strelitzia, Justicia, Medinella, Melastoma, Pentas, Pitcairnia, Pleroma, Russellia, Stephanotis, Allamanda, Plumbago, Ixora, Gesnera, Achimenes, Gloxinia, Begonia, Æschynanthus, Solandra, Aphelandra, Ardisia, Bignonia, Clerodendron, Dipladenia, Hexacentris, Hoya, Ipomœa, Quisqualis, Caladium, Cissus, Croton, Dracæna, all the tropical Orchids, and many other novelties, including Ferns and Lycopods.

The *Dry* and *Moist* stove have been alluded to. The difference between the two is in the peculiar dry or moist atmosphere that is required for various families of tropical plants at all times; or, as in the case of some, at different periods of their growth. For example, most of the succulent plants, such as Cactæa, Stapelia, Aloe, &c., are found indigenous to dry regions, sandy deserts, rocky elevations, and such like places. These require the Dry Stove, if tropical. While those which are found in marshy grounds and low situations, often among dense forests, and other situations of like character, are better suited in the Moist Stove. This house is also the home of the beautifully grotesque family of Orchidaceæ, in the growing season; while the former will concentrate the previous development during the period of rest, and thereby insure a certainty of flowering. Here, also, may be located, in suitable compartments, such aquatics as Victoria Regia, Nelumbium, &c.

The *Forcing Pit* is an auxiliary or helper. It ought to be built similar to the Cold Pit, with the addition of a good command of heat. The object in this house is the forwarding of flowers, and as an accommodation for many tender plants, which are, during a part of the season, unsightly, from their nakedness, or perhaps dormant state. In any establishment of any pretension, the Forcing Pit is the most useful structure on the place, as it not only becomes a receptacle for plants, until they are in full bloom, and fitted for display in the other houses, but also a hospital for any that may be sickly or out of health. It is also useful for propagation, and may be turned to a great number of useful purposes.

The above few remarks only embrace a superficial explanation of the various structures known as plant-houses; but at some future time I may treat the subject more comprehensively, if you think it of service.

A HOUSE IN THE WEST.

We present herewith a wood engraving of a first-class mansion erected at Cottage Hill, Illinois, near the Chicago and Galena Railroad, and eighteen miles from Chicago, by Thomas B. Bryan Esq., an enterprising and esteemed citizen. The situation is on a rise of the Prairie, and enjoys a most extensive view. It is surrounded by newly-planted trees in thousands, and we are greatly mistaken if the example set by Mr. Bryan, of sheltering his grounds, so effectually as he has done, does not produce a lasting effect on the mind of Illinois; its inhabitants may here very soon see the results of planting evergreens, and be made aware of what comfort may result.

The house is well shown in the picture. It contains: 1st, a spacious Hall; 2d, a large Parlor; 3d, a spacious Drawing-room, with a fine view;



"BIRD'S NEST." THE RESIDENCE OF THOS. B. BRYAN, Esq., NEAR CHICAGO, ILL.

4th, a Library communicating with the latter and overlooking the entire estate of 800 acres; 5th, Dining-room; 6th, Billiard-room and office combined; 7th, Plant Cabinet, communicating with Billiard-room and Dining-room; 8th, two Kitchens, Pantries, &c. &c.

There are seven chambers, with ample closets, a bath-room, and a room for the Solar Microscope, a remarkable instrument which was exhibited at the World's Fair in London, and took the prize as the best instrument.

A large Grapery communicates with the Billiard-room, and a Greenhouse and Gymnasium add interest to the establishment.

CULTIVATION OF GLOXINIAS.

If there exist now, among the rich collection of improved European greenhouse plants, any new ones which surpass old-fashioned kinds in beauty of foliage and flowers, the Gloxinias undoubtedly are conspicuous.

These charming Gesneriaceæ, introduced into France in 1835, were forgotten for some years. Several intelligent horticulturists, however, gave careful attention to them, and since 1852 nearly a hundred varieties have been obtained from numerous beds, as the result of the care given them.

Until now the culture of these plants has not always succeeded with those who have attempted to grow them, and some have been discouraged after ineffectual attempts. My own experience, however, has proved to me, that the culture is not difficult, and that the plants themselves are not delicate.

I have tried them in pure vegetable mould, and in mixed soil, and the results have been equally satisfactory.

Towards January, the most favorable season for the repotting of Gloxinias, they are placed in 2-inch pots, in a peat soil; these pots are placed on shelves in the greenhouse, away from too much moisture. Six weeks after, when the plants have leaves, and the roots are too much restrained in these pots, they should be repotted in 4-inch pots, in a powdered peat soil; for Gloxinia roots, being very slender, more easily penetrate the earth, and are less likely to suffer from moisture, yet the precaution of filling the bottom of the pots with broken pieces must be taken before placing the plants in them.

If it be desirable to flower them early, they may be left, without any inconvenience, in these pots, depriving them of nourishment; the sap, absorbed by the leaves, and restrained in its progress, obliges the buds to be fully developed, and produces flowers earlier. If strong plants are wanted, a third repotting may be given them, and thus retard the flowering a month; but in revenge the flowers and leaves will rival each other in vigor and beauty. The flowering continues three months, and as fast as faded ones disappear, fresh ones follow.

Towards September vegetation is slackened; the watering may be gradually discontinued, and through the summer they will scarcely need attention, since Gloxinias only want water when thoroughly dry; it is well to sprinkle the leaves on warm evenings.

From the 15th of September to the 1st of October, the roots should be left

to dry, laid in pots by the beds, mixed with a dry peat soil, and then ranged along the greenhouse shelves, or in a suitable room, protected from frost.

Cuttings may be made at any time of year, but May is the best time. With a leaf, twenty-five or thirty may be made, by dividing all its membranous parts ; the best and most usual way is as follows : take a leaf, cut around the base of the petiole, place it in a cutting pot under glass, in a propagating house. Six weeks after, the plants are taken up ; repot them in 2-inch pots, keeping them so till September, at which time they are to be treated as before mentioned, always taking care to pinch the leaf, which will be forced then to make a fresh bud. A Dutch greenhouse is especially suited to Gloxinias, of the temperature of 77 to 110 degrees. The strong rays of the sun will be intercepted by the trellis or paling ; when the temperature exceeds 110 degrees, open the greenhouse doors.—*Revue Horticole.*

WHISPERINGS AT OUR HORTICULTURAL SOCIETY.

BY FOX MEADOW.

How beautiful and pleasant are the thoughts of the past, when the latter has been properly directed in our walks and labors through life. The reminiscences of good invariably yield consolation, and thus we live, so to speak, not in the present, but in the past and future. So it is, Mr. Editor, with the good horticulturist ; his life, his existence and aspirations, seem also to be wrapped up in the past and future. What he has well done gives him consolation, and that which he intends *to do* carries him and his toils on cheerfully. He sometimes meets with downfalls, and things look dark and dreary, but he also knows that

> "Spring reblooms, though winters blight,
> And day succeeds the longest night."

It has been particularly interesting to me to witness the manifest spirit of determination that exists among amateurs to develop that which is considered perfection in their vegetables, fruits, and flowers. The Horticultural Exhibitions around the city of New York this season have been a credit to all interested in them. That prosperous and thriving institution at Brooklyn never looked so gay with its flowers, and tempting with its fruits, as in September last. The hard and soft-wooded plants were the products of good plantsmen, and to him who glories in the sight of a good orchid, those brought from Jersey City by C. Vanvoorst, Esq., were just the varieties to create wonder and admiration, and would have been equally meritorious had they been placed on a table at Chiswick or Regent's Park. But, thanks to the indefatigable exertions of the worthy president of this society, J. W. Degrauw, Esq., for what it now is—and I would there were more such gentlemen. Then your western prairies would bloom with roses of deeper hues —a knowledge of fruits and flowers would be taught in their schools, and gardens spring into existence filled with luscious fruits. All should take an interest in Horticulture, and Agriculture too, for these exhibitions are to society the same as the press is to the world—*a principle of life.*

We remember standing near two gentlemen at the exhibition in Brooklyn

last June, who were discussing the merits of some Pelargoniums there for competition. One remarked that he could not succeed in flowering them as his neighbor Mr. C. did. "I think I know where you miss it," replied the other. "Aha!" "Yes ; and if you think it won't tax your patience too much just now, I will begin at the beginning and tell you, and then perhaps we shall be better understood.

"First, we shall suppose you to have some old plants on hand in the spring of the year, say March ; we then make a selection of the cuttings, and in doing so select young, healthy, short-jointed wood, take the leading points four to five joints or eyes long, pot each cutting in a small or thumb pot, and use very sandy loam, and plunge them in a moderate bottom heat, and keep close. With due attention to watering, &c., two weeks will root them. Then repot them into a four or five-inch pot, and nip out the point of the young plant, which will induce it to burst the eyes at the axil of the leaves to form the first branches of the plant. The next part of the business is to understand that we must not make a stove plant of the Pelargonium. Give them plenty of air and light ; a shelf near the glass roof is a good situation. The young plant is now growing pretty freely, and we allow the young shoots to grow out and over the edge of this four or five-inch pot, and as they grow we use small pegs and peg the young branches or shoots down flat on the surface of the pot, and divided equally. This arrangement should be properly attended to, and is the foundation of what is to be a specimen plant. As soon as the young shoots have got over the edge of the pot, nip out their points, and repot into a size two or three times larger ; but remember not to allow the young shoots to get ten or twelve inches long before you nip out the points, or the plants will forget that they are intended for specimens, and also omit to burst the proper or base eyes ; and when you have finished the potting process, there will be most likely a vacancy in the centre of your plant. You understand me, sir ; that if the young shoots are allowed to grow and make three or four eyes or leaves in length, you must make them burst all the eyes they make, for the simple reason that you want the branches. Now, by following this process of potting, stopping, and pegging down, from the month of March up to September, you can grow the plant to almost any size you think proper ; but we think a twelve-inch pot is large enough, and into that pot it should not go after September, if you expect to thoroughly flower it the next season. The object in potting at this period simply is, that the plant may get its pot full of roots—pot-bound, as the gardeners call it—and when pot-bound, the plant cannot grow so fast, consequently ripens well all the wood or branches it has made, and when we get well-ripened wood—*you* know what the result is—plenty of good fruit. Well, sir, so it is with flowers. Ripen the wood well, and get them pot-bound, and they must then flower or die.

"By this process of growing the Pelargonium, no sticks are required. Through the winter the plants should be near the glass. Give as much air as convenient, and the state of the atmosphere will allow, and keep them comparatively dry ; in fact, we have often seen them so dry that the foliage would indicate the want of water, and without injury. In reference to the compost after the first potting, they seem to flourish in strong sandy loam, made rich with well decomposed cow manure. The pots should be thoroughly drained. When the month of April comes, then let the plants grow ; give plenty of water, and let it be good strong manure water, and you will see the color

of the foliage change to dark green with a texture worth looking at, and heads of bloom rising like the morning sun to expand into noonday brilliancy. Now in closing these remarks, permit me say, if you desire to have good healthy plants—dwarf and stocky—bloomed without a shower of sticks, and profusely flowered, you must not allow your young plants to remain pot-bound and dried up for weeks together in a three-inch pot, smothered and eaten up with green fly, but must begin at the beginning to promote and carry completely through the whole growth without check. Grow no green fly. Give plenty of air. No coddling up. No ice-water, and last, though not least, *no potting in the spring*, and then your Pelargoniums will flower to your heart's content, and the admiration of all who behold them.

"Come, sir, I see I am getting tiresome; we will go over to that large table and look at those delicious pears from Ellwanger & Barry, grown on dwarfs, that *some folks say* WON'T NEVER DO."

THE ANŒCTOCHILUS.

In a former number of the "Revue Horticole," we spoke of a plant, remarkable for the beauty of its leaves, the *Begonia Rex*, the culture of which is rapidly increasing, notwithstanding the recent date of its introduction into Horticulture. At present, we wish to entertain our readers with two plants, celebrated for the beauty of their leaves, and equally worthy of being sought out by amateurs. These orchideous plants belong to the genus *Anœctochilus* and *Physurus*.

On the mountains of the Moluccas and East Indies, shaded by large trees, in a moist and foggy atmosphere, is found a little plant, with leaves of an astonishingly brilliant color. The natives call it *Petola*. This pretty plant was brought to Europe by travellers, and has been cultivated in our greenhouses for some years. Afterwards some similar plants were found, and M. Blume established from it the genus *Anœctochilus*.

Although most of the orchideous plants of our greenhouses are distinguished principally for the brilliance of their flowers, those just now claiming our interest derive their beauty from the rich and brilliant color of their leaves, the flowers being insignificant.

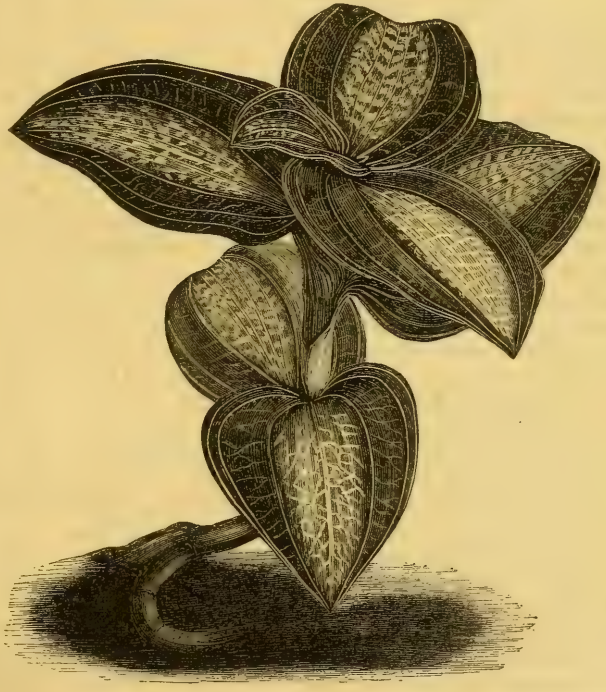
America, and especially Brazil, has furnished us with another Orchid, which, in its downy appearance and the veining of its leaves, resembles very much the Anœctochilus; it is the Physurus of L. C. Richard. The Flora of the neighborhood of Paris has been enriched for five years with a little Orchid, the *Goodyera repens*, discovered in the Mall Henry IV.; not far from the Castle of Fontainebleau. The *Pogonias*, two species of which have been very lately introduced into horticulture, belong to the same, and came originally from Java and the East Indies.

It is likely that the culture of the Anœctochilus and of the Physurus will soon be greatly increased, because already in many places these plants have been cultivated with success in portable glass cases. M. Reichenbach, the younger, the celebrated observer of Orchids, gives us a favorable proof of success in an experiment made with them in a room of Dr. Richter's, at Berlin.

The situation and temperature required for our native *Goodyera* may be

a guide in the treatment of similar plants. This grows under moss in a mixed soil, mostly made of vegetable matter ; a certain amount of continual and equal moisture, and an atmosphere charged with water, are indispensable to it.

The pot to receive the plant should be half filled with broken pieces of old pots, in order to drain it ; the other half may be of a mixture of peat, charcoal, and sphagnum ; the surface should be covered with moss. Finally, cover the pot with a bell-glass, which will give the plant an atmosphere charged with moisture. Morning and evening the inside of the glass should be wiped, to prevent drops from injuring the leaves, which they would gradually do. During winter they require more rest and less moisture ; at this time we expose them to a temperature of 55° to 61°, and in summer 68° to 77°. They should always be carefully sheltered from the direct rays of the sun.



ANŒCTOCHILUS LOBBIANUS, NATURAL SIZE.

As the object is to obtain perfect leaves, the flowers should be destroyed as soon as they appear.

The Anœctochilus and Physurus are nearly allied, the difference consisting in the color of the leaves, and the countries they come from. The former, originally from the East Indies, has a more decidedly downy appearance, and the veining is usually of a golden red color. The Physurus, on the

contrary, belongs to America ; its leaves are of a brilliant green color, and silver veined.

The *Anœctochilus Lowii* of the gardens, described by Mr. Lindley under the name of *Cheirostylis marmorata*, and by M. C. Morren under that of *Dossinia marmorata*, was found in Java by Mr. Low, and introduced into Europe in 1847. It is especially pretty ; the under side of the leaves is of a deep soft green color, the veining of a golden purple.

The *Anœctochilus intermedius* of the gardens resembles the preceding plant.

The *Anœctochilus Lobbianus* is known under several names—*Anœctochilus xanthophyllus*, *Anœctochilus latomaculatus*. According to some authors, the Anœctochilus Roxburghii of Lindley and the Chrysobaphus Roxburghii of Wallich are the same plant. The one which we show in the plate to our readers, received its name in honor of Mr. Th. Lobb. He introduced it into Europe from Java. Its leaves are oval and pointed, their surface of a dull green, the middle of a yellowish red. The lines which trace it all over are of brilliant gold. The under side is red.

The *A. setaceus* of Blume, also called *A. aureus*, is originally from Ceylon.

There are still two more species, the *A. argyroneurus* and *A. striatus*.

In our horticultural establishments there are two species of the *Physurus:* the *P. pictus* of Lindley, from Brazil, with lanceolate leaves and silver nerving ; and the *Physurus argenteus*, differing from it in having oval pointed leaves.

All the plants spoken of above require the same treatment, and it is very desirable that their culture should be extended, especially if, as is probable, these plants may be adapted to Wardian cases, which would be a graceful application of them.—*Revue Horticole.*

CHARCOAL AS A MANURE.

Manures may be beneficial to plants by affording carbonic acid gas to their roots. Animal and vegetable matters evolve this gas while putrifying ; but we are not aware of any manure that absorbs it from the atmosphere, so as to be for that reason beneficial to vegetation. Lime attracts carbonic acid gas from the air rapidly, but combines with it so strongly, that it is useless to the plant until the carbonate of lime so formed is imbibed and elaborated by that plant.

It is to its power of gradually forming carbonic acid gas that *charcoal* partly owes its value as a manure. The chemical operation of charcoal, when employed for this purpose, is by no means so well understood as that of most other fertilizing additions to the land. That the carbon of the charcoal operates so beneficially upon plants, among other modes by a gradual combination with oxygen, hardly admits of a doubt. Liebig gives the results of a series of experiments by Lukas on the use of charcoal as a manure, which seem to corroborate his opinion. From the facts which these chemists, however, adduce, it is evident that the beneficial action of charcoal, as a fertilizer, depends upon the presence of other substances besides carbon. Liebig notes (*Organic Chem.*, p. 62) that "plants thrive in powdered charcoal, and may be brought to blossom, and bear fruit, if exposed to

the influence of the rain and the atmosphere. Plants do no not, however, attain maturity under ordinary circumstances in charcoal powder when they are moistened with pure distilled water instead of rain or river water. Rain water must, therefore, contain within it one of the essentials of vegetable life ; and it has been shown that this is the presence of a compound containing nitrogen; the exclusion of which entirely deprives humus and charcoal of their influence on vegetation." It is ammonia, to whose presence in rain water Professor Liebig thus refers, in whose valuable work (p. 207) the experiments of Lukas will be found. From these we learn that in a division of a low hothouse, in the Botanic Garden at Munich, a bed was set apart for young tropical plants ; but instead of being filled with tan, as is usually the case, it was filled with powdered charcoal, the large pieces of charcoal having been previously separated by means of a sieve. The heat was conducted by means of a tube of white iron into a hollow space in this bed, and distributed a gentle warmth, sufficient to have caused tan to enter into a state of fermentation. The plants placed in this bed of charcoal quickly vegetated and acquired a healthy appearance. As always is the case in such beds, the roots of many of the plants penetrated through the holes in the bottom of the pots, and then spread themselves out ; but these plants evidently surpassed in vigor and general luxuriance plants grown in the common way; for example, in tan.

M. Lukas then gives a list of several of the exotic plants upon which charcoal appears to have produced the most beneficial effects. It appeared also to promote the rapid germination of seeds. He then proceeded to try the effects of charcoal when mixed with vegetable mould, all of which answered very well. "The charcoal," continues M. Lukas, "used in these experiments was the dust-like powder of charcoal from Firs and Pines. It was found to have most effect when allowed to lie during the winter exposed to the action of the air. In order to ascertain the effects of different kinds of charcoal, experiments were also made upon that obtained from the hard woods and peat, and also upon animal charcoal; although I foresaw the probability that none of them could answer so well as that of Pine wood, both on account of its porosity and the ease with which it is decomposed. The action of charcoal consists primarily in its preserving the parts of plants with which it is in contact, whether they be roots, branches, leaves, &c., unchanged in their vital power for a long space of time, so that the plant obtains time to develop the organs for its further support and propagation. There can scarcely be a doubt, also, that the charcoal undergoes decomposition ; for, after being used for five or six years, it becomes a coaly earth. It exercises likewise a favorable influence by absorbing and decomposing the matters excreted by the roots of plants, so as to keep the soil free from the putrifying substances, which are often the cause of the death of the spongioles. Every experiment," concludes M. Lukas, "was crowned with success, although plants belonging to a great many different families were subjected to trial."—(*Ibid.*, p. 211.)

Professor J. F. Johnston (*Elm. of Ag. Chem.*, p. 142) recognizes the good properties of charcoal as "a valuable mixture with liquid manure, night-soil, farm-yard manure, ammoniacal liquor, or other rich applications to the soil." And as he observes in another place, when speaking of the fertilizing portions of farm-yard drainage, (*Trans. High. Soc.*, 1846, p. 190,) "The only substance at present known, by which the separation of all the valuable in

gredients from liquid manure can be fully effected, is animal charcoal. A sufficient supply of this substance, when intimately mixed with the liquid manure, will take up nearly the whole of the saline and coloring matters it holds in solution, will carry down the substances it holds in suspension, and will leave the water nearly pure and colorless. The refuse of the prussiate of potash manufactories will have this effect, and what remains when ivory-black is digested in spirit of salt (muriatic acid) will do still better; but this kind of charcoal is neither cheap nor abundant, and, therefore, cannot be recommended for general use. The refuse animal charcoal of our manufactories is now sold for manure at the price of several pounds a ton: either those who sell it, or those who use it, might render it still more valuable by causing fermenting liquid manure to filter through it before it is applied to the land.

"But other kinds of charcoal possess this property to a certain extent: wood charcoal, reduced to powder, charred sawdust, and charred peat, are all capable of being used with advantage in extracting the ammoniacal and other salts, which give its value to the liquid of our farm-yards. Experiment has shown that when filtered through a bed of such charcoal, the liquid escapes without color, and almost without taste, while the charred peat or sawdust is converted into fertilizing manure. A great portion of the loss now incurred may be prevented by the use of such kinds of charcoal; and the fertilizing substance may, through their means, be applied to our crops at seasons of the year for which, in their liquid form, they are not suited. It is even capable itself of yielding slow supplies of nourishment to plants; and it is said in many cases, even when unmixed, to be used with advantage as a top dressing. In moist charcoal the seeds of the gardener are found to sprout with remarkable quickness and certainty, but after they have sprouted they do not continue to grow well in charcoal alone."—(*C. W. Johnson's Modern Agricultural Improvements.*)—J., *in Cottage Gardener.*

TACSONIA MANICATA.

A PLANT was distributed a few years ago by the Horticultural Society under this name, but I do not hear of it as having flowered in many places, nor have I ever seen it except in my own greenhouse. It is nevertheless by far the most splendid in color of the splendid genus Passiflora, and moreover a hardy greenhouse climber. Neither *Passiflora princeps* (racemosa), the Brazilian stove species, nor *P. Le Michauxii*, nor *P. Kermesina*, all stove plants though they be, equal in color *Tacsonia manicata.* Its color is intense orange scarlet, so identical with the average scarlet Geranium, that petal being laid upon petal you can hardly distinguish a shade between them, while the rays, which are nearly black, enhance this color, and give the effect of a scarlet Anemone. The flower is nearly the same size as *Passiflora cærulea.* It is nothing like so compact as the older Tacsonias, and may be flowered in any ordinary greenhouse, and it is so hardy that its wood survives even when run through the iron bars of the lights within an inch of the glass in a cool greenhouse. Its only peculiarity is in pruning. It flowers, not, as *Passiflora cærulea*, on the wood of the year, but upon laterals produced on that wood, and the most successful treatment is to shorten the

principal shoots in August, when it forms laterals which produce flowers the following spring. I suspect that in a warmer house than mine it would flower early in spring or perhaps in autumn, but as the thermometer falls with me to 35° or 36°, it sometimes loses some of its buds which are formed in autumn; but even thus, enough remains to make the plant very gay in the spring, and, well cultivated, it would be by far the most gorgeous climber we know.—*J. R. S. O., in Cottage Gardener.*

LADDER AND BASKET.



The arrangement which we give in the accompanying design, offers a new and convenient plan of a basket, containing the nails and necessary utensils for paling up a garden wall. This basket is of willow, oblong, about 16 inches long and 6 wide : its depth is 4 inches, and it is divided into two compartments. By means of two hooks 3 or 4 inches long, it is adapted to the bars of a common wall ladder, that is to say, to a 10 ft. ladder, the extreme ends of the bars provided with two pins 8 inches long, serving to separate it from the wall. The hooks fastened by iron wire to one side of the basket, necessarily must be so far from the rounds as not to press the foot of the workman. The basket, as may be seen, can be lifted, at will, from one step to another, and it is held, in the gap, between the ladder and the wall, by the projecting pins. It is destined to replace with advantage the semicircular basket, which is now habitually used for the purpose, and which is very troublesome when working on the ladder.—Chardon Reigner, *Horticulturist at Coulommiers*, in *Revue Horticole.*

(It is also adapted to another purpose. By connecting an old Champagne basket without the top in this way to ladders, it will be found very convenient for gathering grapes from walls or fruit from trees.—*Ed. H.*)

PROPAGATION OF PLANTS BY CUTTINGS.

BY W. S.

This is one of the most common and universally practised modes of extending plants. A cutting is simply a part of a plant taken off and placed in a position to form roots, and become in all respects a living representation of the original from whence it was taken.

The peculiar constitutional conditions which will render a plant favorable or otherwise for this method of propagation, has not been ascertained, and the subject is well worthy of attention by physiologists. While many plants, such as the willow, will throw out roots from cuttings taken off almost at any state of maturity, there are also many that are difficult to increase by this mode, even under the most favorable circumstances known to cultivators.

Choosing Cuttings.—So far as the simple production of a plant is concerned, it matters but little from what part the shoots for cuttings are chosen. Those, however, that are taken from the extreme points of plants are more likely to flower early, and with some plants a more bushy and dwarf habit of growth will prevail for a time, but no permanence of this habit will be obtained by this means. Cuttings taken from side branches frequently form plants having a tendency to horizontal growth, and in some cases it is necessary to bend such shoots close to the soil, in order to encourage a fresh growth from the base, before healthy, upright growing plants can be secured. These peculiarities are not constant, and are not considered important by propagators, although florists occasionally find them useful for particular purposes.

When a seed germinates, the first effort of the young plant is to send a root into the earth; but unless this is immediately followed by the formation of a stem and leaves, the root will speedily perish. The seed possesses within itself the necessary ingredients for the first stage of germination; but as soon as the rudimentary root strikes downward, and the young stem arises and unfolds its cotyledons, the plant thus newly brought into existence changes its mode of growth, and its future increase depends upon the presence and action of leaves. The root, therefore, although it apparently precedes the leaves in germination, is dependent upon leaves for its previous existence in the seed, as its further extension is wholly dependent upon the coöperation of the foliage in the growing plant.

Recognizing these well-known facts in the selection of branches and shoots for cuttings, it follows that roots will be most readily produced when there is a due portion of stored-up matter in the wood, and the root formation will be facilitated when the sap is in motion, and all the processes of growth in full operation.

It is thus evident that there is a certain state of maturity in all plants most favorable for propagation, and if we either anticipate, or go beyond this period in the selection of shoots, additional care will be required in their management, and, with some plants, rigidity of maturity may render the root-forming process altogether impracticable.

As already observed, some plants seem so strongly imbued with the principle of life, that shoots of any age will root with great certainty, even if they are taken from the plant during its season of rest; with the majority

of plants, however, greater care is necessary; among these nearly all evergreen trees and shrubs may be included.

Of this class the most suitable shoots for propagation, are small points of the current year's growth that have assumed a brownish color indicative of approaching maturity; a few leaves should be retained to assist the development of roots.

Plants of a succulent nature, and such as are technically termed "soft wooded," are generally propagated by cuttings taken from the points of growing shoots, the peculiar treatment of which will be further alluded to.

Preparation of Cuttings.—In preparing a cutting we are guided in a certain measure by the fact that roots form with greatest facility from joints or buds. It is true that a *callus* will form on the cut surface, although the cutting is deprived of all buds but those intended for upward growth, and roots will frequently protrude from all parts of the inserted stem, but the accumulation of tissue will increase with greater rapidity when the section is made immediately below a bud. In cutting the section, great care is requisite that the part is not bruised, which tends to decay; cutting with scissors should therefore be avoided; a smooth, clean cut with a sharp knife is best.

The necessity of retaining leaves on cuttings depends upon their maturity; if soft and slightly charged with organizable matter, the leaves continue to perform their functions and assist growth. It would be difficult to define the quantity of leaves that ought to be retained, and although there is no doubt that they facilitate the formation of roots, yet they involve a more skillful management of the agents of vegetation during that process.

With plants that root slowly the cutting may undergo a preparation before removal from the parent stem. This is effected by ringing the shoot at the intended point of separation, a callus will form round the upper edge of the ring, from which roots will emit when the cutting is removed and inserted in the soil.

(*To be continued.*)

LOVE OF NATURE—BIRDS—THE CHICK-A-DEE.

BY C. N. BEMENT.

It is impossible that we should be other than an admirer of Nature. In all our solitary rambles, whether upon the wild and lonely hill-side, or in the heart of the pastoral valley; at the edge of the mirror-like lake, the bank of the babbling brook, or along the border of the mountain rivulet—our eye is always filled with beautiful and picturesque objects. Our ear soon becomes familiar with the light carol of every bird which inhabits the thicket or the forest; and our eye is soon made acquainted with the whole lovely family of flowers, which enamel the earth, and enrich the air with their perfume. There is not a wild flower that nods to us from the top of the verdant bank, or the vine-covered precipice, or a bird that salutes us with its voluble overture from its leafy dome, that we cannot recognize and call by name.

We have ever been lovers of birds, the denizens of the air. They have ever appeared to us almost too fair and pure for this grovelling, sensual world. In our boyhood we were taught that it was wrong to harm some

kinds of birds ; but there was a large class that were proscribed as doing injury to the farmer, (while they were innocently employed in seeking their daily food,) and he that killed the most was the best fellow. For many years past we have supposed that the birds were rapidly decreasing, for their numbers in the fields and groves were few. A few years ago we moved on to Springside, our present habitation, where the cottage is surrounded with beautiful trees, and we soon found the birds made it their home, as they arrived from their southern journey. They were not allowed to be disturbed, and they built their nests and reared their young in the immediate vicinity of the cottage. In the month of June more than twenty varieties of birds made their homes on the premises, to whose songs we could listen in the lawn and surrounding fields. No birds are allowed to be killed on the place, not even the saucy and impudent Cherry-bird that steals our fruit, or the Sparrow that robs us of our strawberries ; the consequence is, their numbers have greatly increased.

Treat the birds kindly, and they will become almost domesticated—follow the plow and pick up every straggling worm or grub that is turned up from his dark dwelling. For doing so they deserve well of the farmer, and no honest man will cheat them out of their part of the crop, much less kill them for trying to get it.

There is reason to believe, that although most birds live on a variety of food, yet each particular species of birds have a greater partiality or fondness for some particular kinds of insects or reptiles. This evinces *a plan.* Many species of birds follow civilization. The same may be said of several kinds of insects ; or, at least, they multiply under its influence. Hence the birds follow, in order to reduce the number of insects. This also evinces *a plan.* Let us then study and observe. No man can study "Nature's works and ways," without becoming wiser and better.

"Birds," says an elegant writer, "are the best of entomologists. No ornithologist ever hunted specimen birds with more industry and perseverance than is exhibited by birds themselves in their researches. They disport in the air, penetrate every nook and corner of thicket, hedge and shrubbery ; they search the bark, pierce the dead wood, glean the surface of the soil, watch for the spade, trench, and follow the plowman after worms and larvæ. A single bird in one season destroys millions of insects for its own food and for that of its own nest. No computation can be made of the insects which birds devour.

"Birds are the best of scavengers, the nimblest hunters and adroit butchers. They have no Grahamite scruples to agitate this worm and bug-loving tribe. They do not show their teeth to prove that they were ever designed for meat. They eat what they like, wipe their mouth on a limb, return thanks in a song, and wing their way to a quiet nook to dose or meditate, snug from the hawk that sails about in the air above. To be sure, birds, like men, have a relish for variety. They are the best of pomologists. We charge every man and boy with positive cruelty and dishonesty who drives the birds from the garden in fruit time. On investigation it has been discovered that they never disturb sound cherries, and none but those that have worms in them." We say, therefore, *spare the birds*, and they will destroy millions of your worst enemies—the worms.

We are not writing the history of birds ; we are not writing methodically; we aim at no order. Ours is the humble task of recording a few observa-

tions called forth by the phases of the months ; we may therefore be pardoned for introducing the little birds, our favorites, whose visits to our section appear to be irregular.

Look up into that branch whose beauteous spray sweeps to and fro, responsive to every breathing of the wind. See you that merry, lively little Chick-a-dee, hopping about from branch to branch in the ecstasy of joyous freedom—now pecking pertly at the dun-colored cuticle of the tree ; now seizing coyly in its beak some grub or aphide? Most varied are the attitudes which they now assume ; not an instant of repose do they know ; restless, creeping, calling, pendent, but ever in progress, advancing with the cautious watcher. Beautiful birds are the Chick-a-dees, whose actions we now stop for a moment to contemplate, and who are now displaying their characteristic restlessness and vivacity in rose-bush and fruit-tree, to obtain a supply of hibernating insects. Most graceful and easy are their actions. Hovering on the wing, ever and anon lightly darting away and as lightly returning.

Oh ! it is not the deed of a noble heart which can ruthlessly slaughter the little feathered songsters of our lawns and groves—those brilliant Psalmists of Nature, who are ever reiterating their jubilant songs of praise, and thanksgiving, and love—whose sweet, melodious voices come wafted like incense to us upon the summer zephyrs, and, floating onward and upward through the grand old woods, are caught and reëchoed with new power and new beauty, and varying tones, by myriad tuneful chorists, until the air seems filled with the very essence of harmony, and the embowered branches of the overspreading trees are converted into a grand orchestral temple.

We love little birds. We delight, when suffering, and care, and sorrow have left their impress upon our mind, or some dark shadow of Evil or Spirit of Gloom has crossed the brightest path of life, dimming our faculties, destroying our perception of enjoyment, and filling our very soul with the impress of Melancholy, to stroll into the woods, leaving the artificial world behind us, turning our backs upon our fellow-men, and shutting ourselves up in a close communion with the mysteries, and wonders, and beauties of Nature.

INARCHING.

The following practical observations on Inarching by separating the branch from the parent tree, and plunging the end of it in a jar of water, or planting it in the earth, will be interesting to our readers.

This method of inarching with the end of the detached branch plunged in a jar of water, or sunk in the ground, seems to have been long known, as Etienne Calville mentions it as early as 1803 ; and André Thouin describes it under the name of the " Kew Graft," which seems to prove that it came to us from England.

The following observations on the advantages to be gained by its adoption by amateurs and gardeners as a source of profit, are the results of a series of experiments made by us since 1842.

In 1850, we grafted for M. Mouchonnet, at Choisie-le-Roi, a double flowering peach-tree, an espalier six years old, which of course had never borne fruit. The bark was too rough and hard to admit of grafting in the usual

way, and we therefore tried our new method, and inarched with the branches of a kind of Grosse-Mignonne, putting two at the base of the tree close to the lowest limbs, and two others, which were to become the new branches.

The experiment succeeded perfectly ; and when the grafts had taken well, we cut off the branches in order to concentrate the sap ; and that year the shoots were 36 inches long, and the next they bore very fine peaches, a most agreeable surprise to the owner.

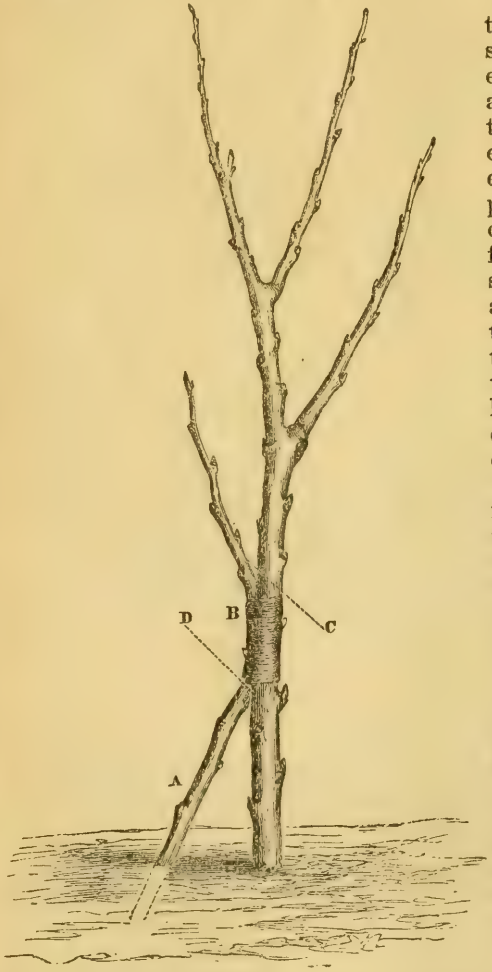


Fig. 69.

This success encouraged us to try to renovate the stocks of some old pear-trees, with the ends of the grafts in water ; and the result would have been the same if they had been planted in the ground. For this experiment we chose an old pyramidal pear-tree with branches from another tree measuring from 18 to 21 inches, which were sunk in the earth, in February and March, taking care to place them in such a way as to lead them to the spot where they were to be inarched. When the leaves and flowers appeared on the tree, we performed the operation as described in our "Méthode Élémentaire," leaving only four or five buds above the part grafted, and shaded it from the sun with a fold of paper. They all succeeded as well as those plunged in water. On examining the bases carefully, we found that the part that was in the water had produced a small excrescence, from whence sprung spongioles that had perished for want of nourishment. It was the same with those that had been sunk in the ground ; but in this case we attributed the death of the spongioles to the nature of the soil of Vitry and Choisy-le-Roi, which is not favorable to the growth of the pear-tree. The event justified our suspicions, for on mentioning the fact to an amateur from La Ferté-Gaucher, who was visiting our grounds, he made the experiment on his return home, and inarched the pear upon quince, and the peach upon the almond, planting the ends of the stems in the ground. These branches took root perfectly well, and

at our Horticultural Exhibition in the autumn of 1858, he showed pear and peach-trees inarched in the spring of the same year, having shoots as thick as one's finger, and three feet seven inches long, with a fine tuft of roots at the base of each. This interesting fact would have passed unnoticed if I had not made it my duty to speak of it while pointing out the advantages of this method of grafting: first, they graft their stock; and secondly, they obtain another healthy tree by cutting off the graft below the point of junction with the stock.

This result has never been obtained by budding the pear and peach-trees, although it has succeeded with the apple, for I have now several varieties of Calville and Canada, which I have watched for three years. These experiments prove that all our fruit trees can be reproduced *francs de pied*, (from cuttings?) if they are planted in a rich soil like that of "La Ferté-Gaucher," which is alluvial and very fertile.

Figures 69 and 70 show the details of the operation. A, 69, a branch planted at the root of the stock. A, 70, a branch plunged in water. B, the part of the branch bound to the stock. C, the upper cut, after the graft has set. D, the lower cut below the junction.

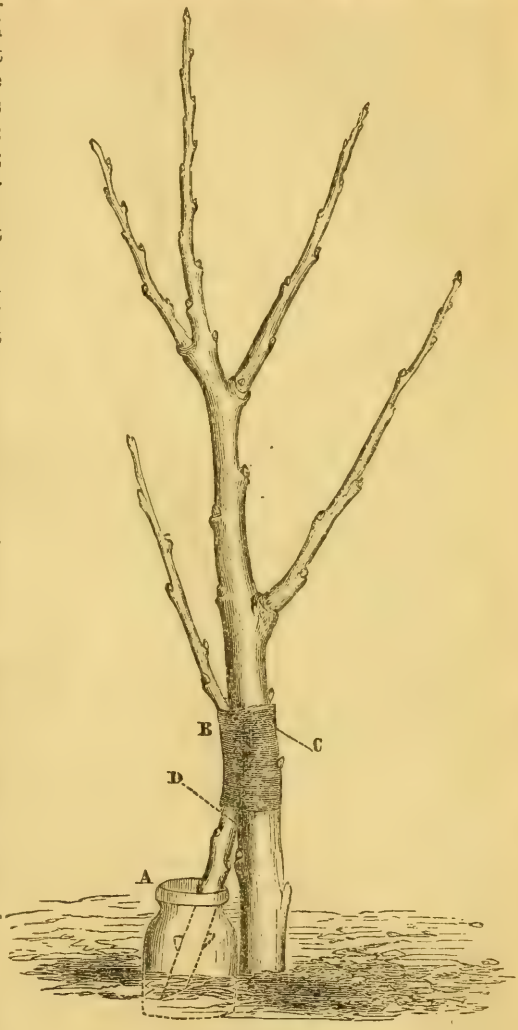


Fig. 70.

This inarching may be of great service to horticulturists and fruit-growers when the buds have been destroyed by severe frosts, as they grow with the gradual advance of vegetation, and the planted branches soon become bearing trees; and above all, it is useful to renovate and beautify the bare trunks of old trees; and these results are important not for fruit trees only, but for others.

We hasten to bring this subject to the attention of horticulturists, hoping to induce them to make experiments which may prove profitable.—*Revue Horticole.*

A FEW FINE ROSES.

BY A BUFFALONIAN.

The present seems to be a suitable time to make some observations on Roses, and compare notes respecting new or favorite varieties. These have so rapidly multiplied within a few years past, that an amateur, even of experience, can scarcely look at a modern catalogue, with a view of selecting from it, without a feeling of despair. What a multitude of sorts are there to which the same description will apply! I have just glanced over a foreign catalogue, and find some thirty Perpetual Roses described as "deep rose." These *may* all be, and many doubtless *are*, quite distinct, but still resembling each other too nearly. Want of distinctness is the greatest fault of our collections, and in the profusion of new varieties which are annually sent out, the *last* thing thought of by the originators appears to be, whether they are *distinct* from sorts already in cultivation. If the leading horticultural societies would institute a sort of censorship over this flower, it would be a good move. Why could they not treat roses as the American Pomological Society does fruits, recommending some and condemning others?

I am an ardent lover of roses, and have been at some pains to obtain the best varieties, but find, among the many new sorts, few that excel some of the old established favorites. Still, there *are* new varieties which are a great improvement upon the older ones, and to these I do not hesitate to accord their full share of admiration. This improvement is especially discernible in Moss Roses, of which a few years since there were but few kinds; and these, with few exceptions, valuable only while in bud. Now, Moss Roses are numerous, and not only are they beautiful in bud, but several sorts are, when fully expanded, very finely formed, although, of course, in this state the greater part of the moss is concealed from view.

To commence with June Roses, among which are several varieties which can scarcely yet be dispensed with. I will first mention one of my especial favorites—of the class "Rosa Alba"—La Séduisante, a charming rose, of a deep rosy blush towards the centre, becoming nearly white near the edge. It is of good size and fine form; and its very numerous buds and flowers are finely contrasted with a very abundant foliage, of a peculiarly intense green.

Among Damasks, there is one variety which is quite indispensable to any collection, however small—Madame Hardy. This is the finest white rose that I have seen, being quite large, of the purest white, and beautifully cupped, although it not unfrequently shows a green bud in its centre. It is of vigorous habit, and a free bloomer.

Provence.—In this class is that old favorite, the Cabbage Provence, still one of the best. Even Mr. Rivers says, that "No rose is more fragrant and beautiful." If it were but a Perpetual!

Dometille Becar is a large, very double rose, of a bright pink, with sometimes lighter stripes.

Reine de Provence is also a quite large, and very good rose; pink, approaching to lilac.

French.—Perle des Panachées is one of the prettiest of this class. It is neither large nor very double, but is beautifully striped with pink and red,

upon a nearly white ground, closely resembling in color a striped carnation.

Sanchette is a finely formed variety, of a deep rosy pink, and very full.

Schonbrunn, light crimson, very full, and finely shaped.

Triomphe de Jaussens, purplish crimson, fine.

Triomphe de Coster is a richly colored rose, and an abundant bloomer. Large, well formed, and double deep crimson.

Hybrid China.—Chenedolé, a very large, showy rose, not perfectly double. Bright crimson.

Double Margined Hip is a very pretty and distinct little rose, although not very full. Color white, edged and shaded with pink.

George the Fourth. One of the best of the class, and very desirable. Deep purplish crimson. Blooms freely.

Magna Rosea. A very large pink rose, but not very double.

Madame Plantier, white; not very large, but fine.

Hybrid Bourbon.—Charles Duval, a beautiful rose ; large, finely formed, and of a lovely bright rose color.

Coupe d'Hébé is one of the most beautiful roses that I ever saw. Its shape is scarcely to be improved, and its delicate pink color is remarkably fine.

Frederic the Second, a large, deep crimsoned sort; quite good.

Paul Perras, very large pale rose; not very full.

Paul Ricaut, large vivid crimson ; very good.

La Vesuve is the most perfectly formed rose that I have seen. It is as regularly imbricated as a Camellia ; quite large, and of a lovely bright pink color (I am not quite positive that it belongs to this class).

Of the Austrian Briers, Persian Yellow is undoubtedly the best. It is a splendid yellow, but not very vigorous, and has a villainous smell.

Climbers.—Among the Prairies, I have seen none so pretty as Ranunculiflora. It is a lovely blush, and much better formed than Baltimore Belle. These two, with Queen of the Prairies, are invaluable.

Queen of the Belgians is one of the best Ayrshires. It is not large, but pure white, and exceedingly pretty.

Mosses.—In this beautiful class, the varieties are becoming numerous, and we shall doubtless have, ere long, perpetual blooming sorts worthy of the name. Of the kinds now so called, few will bloom more than twice, and many, if I am not mistaken, will do so much only with careful culture and pruning. General Drouat is one of these, of a fine dark crimson color, but not very double. White Perpetual is well known for the beauty of its immense clusters of buds. The expanded flower is not pretty, and I have rarely found it to bloom more than once. I imagine that the most certain method of obtaining flowers from these sorts in autumn, is to prune back the shoot below the flower buds, as soon as the latter are readily perceptible. This will, if the soil is in proper condition, cause a second crop of shoots to push, which *should* flower finely.

Among the old varieties, the Blush and Common Red are still favorites, and not yet to be dispensed with. Celina, of more modern origin, is a fine crimson, and has few equals.

Comtesse de Murinais is one of the most desirable. Its buds are of a delicate blush, and the just opened roses, a pale flesh, soon changing to pure white, and quite double.

Charlotte de Sor is a finely shaped rose-colored variety.

Crimson, a free grower, and quite pretty ; not very double.

Ætna, light crimson ; sometimes quite brilliant and pretty.

Jean Bodin is a very fine rose, deep pink ; of a beautifully cupped shape, and quite double.

Lanei, deep rose, sometimes nearly crimson ; not very full.

Luxembourg, a magnificent crimson, but sadly deficient in petals ; its buds are exquisite.

Marie de Blois is very large, of a bright rose-color, and quite double, but a coarse flower ; its habit is very robust.

Presque Partout is exceedingly mossy, the leaves and branches being nearly covered. The flower is bright rose, full and pretty. Moss Moss and Zoé are very similar to, if not identical with, this sort.

Princess Adelaide is a magnificent rose, nearly as large and quite as double as the Cabbage Provence. It is a deep blush, well shaped, and extremely vigorous.

Sœur Marthé, rose, beautifully formed, very pretty.

Unique Nouvelle is a fine dark crimson, somewhat mottled ; very full and fine. The darkest Moss that I have seen.

Hybrid Perpetual.—The varieties in this class have become so multitudinous, that one is quite at a loss to particularize. I shall not attempt to do justice to all, but content myself with mentioning my particular favorites, and some of those among the newer sorts which give promise of excellence.

Baronne Prevost will long be a favorite. Its large and abundant flowers, of a rich rose-color, are really magnificent.

Caroline de Sansal is a charming rose, of a pale flesh-color, and fine form; quite distinct and beautiful.

Charles Boissière, a fine rose of which I hear little said ; it is a deep brilliant crimson, and well-shaped.

Duchess of Sutherland, bright rose, well-formed and very fine.

Géant des Batailles, not large, but very beautiful and distinct ; its fiery crimson can scarcely be excelled.

General Castellane, a beautiful rose of a dark rich crimson, finely formed and distinct.

General Jacqueminot. This is a magnificent flower when first opened, but a hot sun soon causes it to droop ; its color is a brilliant crimson, and form good.

Gloire de France. Another bright crimson sort ; very fine.

Graziella, although perhaps not perfectly double, is a lovely rose ; its flowers are a clear light pink, beautifully cupped, and when partially expanded, exceedingly pretty.

Lady Alice Peel is very beautiful ; its shape is exquisite, and color, fine deep pink, veined with red.

La Reine is undoubtedly the largest of roses ; but it is sometimes coarse, and its flowers are so very double that they frequently open badly.

Lord Raglan I have not yet fairly proved, but have high hopes of it ; vivid crimson, and very double.

Madame Laffay is an old favorite of mine. Its finely-formed rosy crimson flowers, splendid foliage, and free blooming habit, render it one of the most desirable.

Madame Masson, rosy crimson, very double and fine.

Prince Chipetouzikoff, deep red, very double, but not large ; well-shaped and very good.

Pius the Ninth is a fine rose of a deep purplish red, blooming abundantly.

Robin Hood, rose-color, not very full ; very pretty.

Reine des Fleurs, pink, tinged with lilac, beautifully formed.

Sir John Franklin, bright crimson ; very double and good.

Souvenir de Leveson Gower, bright red ; very pretty.

William Griffiths is one of the most beautifully shaped of roses ; is a pale rose color, with a tinge of lilac, and exceedingly double and fine.

It would be easy to enumerate many more, nearly, if not quite as good, as those above named. I find, however, that my *few* varieties have already reached a number, which would form of themselves quite a respectable collection, and will not at present pursue the subject further, passing by, in silence, the many lovely roses embraced in the several classes usually cultivated under glass, with a mental resolve to speak well of them on a future occasion.

ORNAMENTAL PEAR-TREES.

BY WILLIAM SAUNDERS, LANDSCAPE GARDENER, GERMANTOWN, PA.

There is probably no species of tree that produces greater variety in form of growth than the pear. It would be difficult to imagine any form in a deciduous tree that is not duplicated in some of the great variety of this fruit. Those of a spreading growth frequently assume that dependent habit so much admired in the Elm, Linden and Silver Maple ; of such are the Summer Bonchrétien, Beurré de Capiaumont, Beurré Diel, Beurré de Ranz, and Passe Colmar. The round, compact form of the Seckel is readily distinguished. The symmetrical growth of Vicar of Winkfield, Tyson, Buffum, and many others, is not excelled among deciduous trees, as may be seen from the accompanying engraving of the last named, which is a faithful representation of a tree growing in the grounds of Messrs. Ellwanger and Barry, Rochester. I can vouch for its accuracy, having accompanied the artist, Mr. Hochstein, while he was *taking* it. This tree possesses much of that refined massiveness of habit, and graceful delicacy of stem, the perfection of which belongs exclusively to the Sugar Maple.

There is as much beauty and variety in the foliage of pear-trees as there is in their habit of growth ; the broad deep green leaves of the Vicar of Winkfield, Napoleon, Chamoisine, the Jaminette, and particularly the beautiful glossy foliage of Baronne de Mello, are always admired.

The fall coloring may also be noticed ; among the most decidedly effective are the White Doyenné, Doyenné Boussouck, and the Buffum. The Glout Morceau, one of the most beautiful of pear-trees, retains its leaves fresh and green after all others fade ; indeed, this plant grows so freely, and at the same time so *stocky*, that I would suggest its use as a hedge plant, for dividing lines in the fruit garden ; few plants are better adapted to this purpose.

[The suggestion of Mr. Saunders, that the Glout Morceau should be used as



BUFFUM PEAR-TREE.

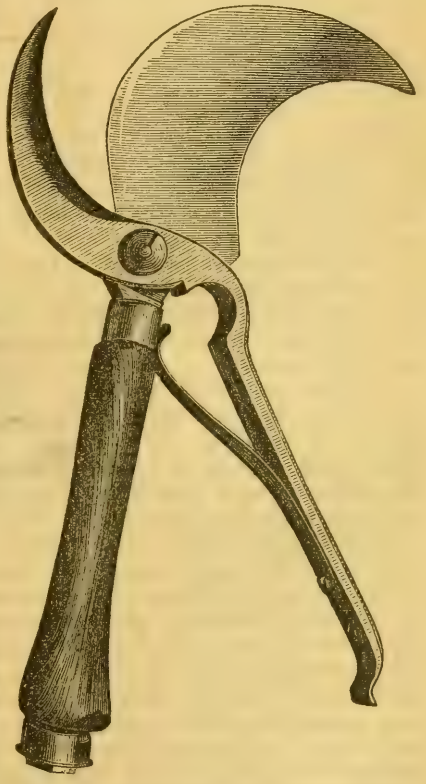
a hedge plant, is a somewhat novel one, and we should be glad to see it put in practice. With proper attention to pruning and thinning out, a hedge of this kind might be made both useful and ornamental; the fruit, we think, would ripen fairly, and fully repay any extra labor that might be bestowed upon it.—Ed.]

THE BRANCH-TRIMMER AND PRUNING-KNIFE.

The instrument here represented is due to M. Marmuse, maker of horticultural implements.

Its object is to obviate the necessity of using two instruments alternately, according to the parts needing attention in the tops of trees.

The trimmer and pruning-knife is composed principally of two arms; the larger and longer one shows the common pruning-knife, but differs from it in the back being sharp; the other is smaller, more slender, and shows the edge of the clipper. By the play of the instrument, the object placed between the two arms is easily cut; the smaller one works upon the larger without passing by the sharp back placed on the outside edge, which would make it dangerous to use.



THE BRANCH-TRIMMER AND PRUNING-KNIFE.

In becoming accustomed to this instrument of M. Marmuse, when ready to pass from the operation of the clipper to make use of the pruning-knife, it is only necessary to turn a screw situated at the lower end of the handle. By this movement, the handle of the clipper flies from the groove by the aid of a spring which is fastened on this handle, and presses against the handle of the pruning-knife. These two parts are thus separated, and the two blades are opened.

Even very strong branches are easily cut by this instrument. As to the pruning-knife, it does not seem to us of the most convenient shape.

Experience has proved that much of a curve in the pruning-knife is entirely useless, and even annoying on this account, that only the weakest part of it can be used.

The curve of the pruning-knife of M. Marmuse needs then to be materially modified, in order that the instrument may be adapted to the service we expect from it.—Leon Gouas, in *Revue Horticole.*

LORD RAGLAN ROSE.

(See Frontispiece.)

In our *Frontispiece*, the reader will find a beautiful and accurate drawing of this new and superb Rose. The engraving is so well done that a description is hardly needed. Lord Raglan is a large and finely-shaped Rose, very double, nicely cupped, and of a vivid crimson and scarlet color. It blooms freely, and is a robust grower. It will take rank among the best of the new roses, and will no doubt be a favorite with the amateur.

THE TAYLOR GRAPE.

Editor of the Horticulturist:—In the October number of your valuable Journal, I notice that you acknowledge the receipt of a bunch of the Taylor Grape from Samuel Miller, Calmdale, Pa., who, it appears, had it sent to him, probably from Kentucky, where it hails from, and has been known for some years.

I would suggest, before we go any farther with this grape, that its true or right name should be settled, so as to prevent confusion, as far as may be, in the nomenclature of our hardy grapes. I also observed a notice of the same grape in another periodical, by the editor, to whom Mr. Miller had sent specimens.

I believe this is the same grape, the description and history of which were given in the *Valley Farmer*, (published in St. Louis, Mo.,) on page 122, in the April number for 1858. This was the first published account that I had seen of it, and was headed, "A New Seedling of Kentucky." The editor of that journal in that article says it "has been grown by a few persons in Kentucky for twelve or fourteen years, and known as the "Bullitt Grape." By this we see that it has a name of many years' standing, doubtless a local one, but just as good to become general as any other, and it claims precedence over all others, by right of priority. The editor, in the article alluded to, goes on to say, "We are indebted to Judge John Taylor"—whence, doubtless, its name—"for a full account of it;" and then proceeds to give its qualities, habits, description of vine, fruit, &c., and closes by saying that Mr. Longworth pronounces it one of the very best grapes for ladies' wine, and Prof. Noble Butler is of opinion that it is not inferior, in any particular, to the Rebecca or Delaware. But with this we have nothing to do in this communication, which is made simply to assist in correcting any errors in its nomenclature.

We received cuttings from the same source, at the same time, and taking the article in the *Valley Farmer* as our guide, have grown it, and now have it in our catalogue under the original name of "Bullitt." Since, however, it left Kentucky, it has been dubbed with a new name, which creates great confusion. We contend that it should bear the name of "Bullitt" until some horticultural society, or the National Pomological Society, shall change its name. And we ask you, as the editor of the leading horticultural journal in America, (if the facts given are true,) if its name should be changed by any person to the Taylor? Yourself and

readers are well acquainted with the rules that govern the nomenclature of new productions, and will render a just verdict accordingly.

It matters but little by what name a fruit is known, provided it is known everywhere by that name, and has no synonyms, and as we shall doubtless hear further from this variety, let us try to set ourselves right as to the proper name it should bear. The grape mania having started in these latter days of scientific accuracy, it would be unpardonable if the nomenclature of this fruit should fall into the confused condition of some of our earlier fruits; and the railroad speed with which new varieties are increasing, threatens to demand more space in our next fruit-books than those good old-fashioned fruits, the apple and pear, and without a tithe of the range of season, or quality, that either of these possesses. We should not, therefore, have one variety under two names, or admit any varieties into the lists that are not really an acquisition.

St. Louis, Mo., Oct. 20th, 1859. CAREW SANDERS.

[We deprecate, equally with Mr. Sanders, the needless and heedless manner in which synonyms are multiplied. If this Grape has been known for years as the "Bullitt Grape," as would seem from our correspondent, then that should be its name, and no other, until it is changed by some person or persons competent to do so. We now have acknowledged rules of nomenclature, and an observance of these by all parties would save much confusion. We purpose soon going into the subject *in extenso*, and in the mean time we shall look further after the Taylor Grape.—ED.]

TREES GROWING IN, OR OVERSHADOWING A GARDEN.

THERE are few things on which the owners of property look with more respect than old trees. Like old friends, they cannot well be discarded without a just and urgent reason: and even then the act of condemnation is often attended by such misgivings, that it is not until the object has been fully attained for which the old tree was taken down, that regrets for its absence give place to a feeling of rejoicing at the beneficial change effected. This very justifiable attachment to old trees may, however, be carried to excess. Many important improvements are effectually checked by "a tree in the way," which it would be almost treason to destroy; while, at the same time, should any uncontrollable agent, as a high wind or stroke of lightning, do the act of destruction, the greatest friend of the unfortunate tree will hardly express a regret that it is gone.

Now, there is something certainly wrong in this ; and the veneration in which the tree is held is certainly much beyond its merits when it obstructs some particular view, shades some important border or building, or prevents the effectual accomplishment of some interesting alteration. Many windows are deprived of half their usefulness by large trees growing too close to them : and it is also a certain fact that many chimneys are made to smoke the rooms in a like case. It would be wrong to condemn that feeling which venerates old or fine trees ; but when such stand in the way of an acknowledged improvement, the proper question to ask is this, If the tree in question were not there, would you wish to have it in that place ?

If the answer be in the negative, then cut it down immediately, for it

cannot be wanted. But it is not my purpose here to find fault with the propensity we mostly all have of clinging to something or other, but to complain of the practice of growing large fruit trees in kitchen gardens; as Apple, Pear, and Cherry-trees are often found high enough to require a thirty or forty-round ladder against them to gather the fruit. These towering objects are much more hurtful in the kitchen garden than is generally allowed ; as their roots, in the good cultivated mould of a kitchen garden, run a great distance, and the crops underneath are very indifferent in quality. As most gardens are more or less frequented by the family and their visitors, good useful crops are certainly much more interesting than poor ones, with an indifferent crop, perhaps, of Apples or Pears on the trees which overhang them. Besides which, it so seldom happens that there is a good crop on trees planted so very widely apart, that it is much better to have all such trees growing in one place, and only so near each other as to occupy the ground without crowding. The ground on which such trees are growing might either be in tillage or in grass. If the former, some small crops, as Currants or Gooseberries, may be grown at distances of six feet apart ; but the digging among these must be very shallow. There are hundreds of acres of orchards of this kind ; and the same may, with equal advantage, be grown elsewhere. The object here advised is to relieve the kitchen garden of those high and over-shadowing trees which injure and disfigure so many plots of vegetable ground.

Now, in addition to the evil done by trees inside a garden, those outside it are often much too near it. High trees on the south side of a garden overshadow it very much in winter ; and fruit trees against walls so deprived of the sun in winter never do well. Trees are also liable to send their roots long distances foraging ; and the more robust kinds quickly devour the fat of the land. I have seen a root upwards of fifty feet long, and nearly as thick at one end as the other, where it had got into a line of good material, and speedily found its way to the furthest end of it. Trees on lawns will also search out flower-beds, and occupy their enriched contents, with astonishing rapidity, to the detriment of the proper tenants there : while peat or bog-earth, of prepared plant-borders, is especially liable to invasion. It is, therefore, advisable in all these cases to keep a watchful eye on the intruder ; and when the offending tree cannot be taken away, cut back its roots within its own territory. Supposing it to have usurped a flower-bed in the lawn, merely cutting its roots at the sides of the bed and renovating the soil would only be to invite it to another feast, which, if in the growing season, it would swallow up in a very short time. But cut back its roots by making a ditch about two feet or so from the edges of the bed, and fill that ditch with something distasteful to it. Chalk rammed in hard answers pretty well ; or, if it must be earth, let it be of the poorest kind. Some run to the expense of a brick wall ; but I do not advocate that, as it is not always an effectual barrier. I once knew an excellent garden wall, with Peach and other trees on the south side, and on the other side timber trees of various kinds were growing close up to it : and whether the latter smelled the better material their more delicate brethren had to grow in on the south side, or by the poverty of their own side felt themselves justified in the invasion, certain it is that in two years the whole of the twelve-feet-wide border on which the Peach and other trees were growing was filled with Ash, Elm, and Chestnut roots. It is needless to say the Peach-trees suffered sadly, the evil not being

discovered until much mischief had been done. It is, therefore, advisable for all who have timber trees growing in the neighborhood of their cultivated grounds to look well to them, that they do not usurp more than their share of space. It is also advisable for all who plant fruit trees in gardens to consider whether they are likely to become standards or not, and, if any danger of the latter, try and plant them somewhere else; for it not unfrequently happens, that a small tree is put in under the plea that "it can do no harm," which, growing up into, perhaps, a fine one, is then too good to cut down; and damage to the crops and irregularity in appearance are the results.

In condemning large standard trees in gardens, I by no means find fault with the trellis-trained ones which form so important a feature in some gardens. On the contrary, where the roots of a tree can be made to occupy the bottom of a walk, or other piece of ground not under cultivation, and its top likewise not being detrimental to anything near it, the tree then is not only excusable, but highly recommendable. Tunnel-shaped trellises have become fashionable of late; but where a large quantity of fruit has to be grown with the least possible trouble, be assured that large, full-grown trees are the best to produce this. Training in fantastic forms may please the eye; but the larger fruits, as Apples, Pears, Plums, Cherries, and the like, bear the most plentiful crops when not too much cut. This, however, is foreign to the subject in hand, excepting so far as to give additional reasons for not having too many fruit trees (trained or otherwise) in the kitchen garden; and be sure to keep the more voracious timber trees at a safe distance. Shelter from cold winds is doubtless often urged as a reason for having them so near; and when the belt in the rear of these is narrow and thin it is not prudent to cut much away without due consideration: but where there is plenty to work upon let the axe and mattock be freely used, and it will be found that trees at fifty yards' distance from a wall shelter it nearly as much as when only at fifteen yards, while their shade is less hurtful. The same may be said of buildings and other towering objects.—J. Robson, in *Cottage Gardener.*

"ACCLIMATING" FISHES.

Surprise has been expressed by gentlemen who have given attention to ichthyology, that I could so readily fresh-waterize salt-water fish. Now, the fact probably is, that all fish were originally inhabitants of salt water, but the Deity having implanted in them habits of wandering, they have been gradually dispersed throughout all the waters tributary to the great oceans, and carried by birds to every pond, pool, and lake on the face of the earth, which teems with countless millions of organized insects, eternally propagating their species to supply them with food. Man, animals, and fish can at all times change their residences and become acclimated to any locality. When fish make these changes, it becomes very difficult to note with fidelity the alterations that frequently take place in their color, season of breeding, &c., involving the natural history of this creature in much obscurity.—*Pell's Report on Fishes.*

ORNAMENTAL GRASS.



QUAKING GRASS.

Briza Maxima (Greatest Quaking Grass.)—*Roots* annual, and consisting of many white, fibrous rootlets. *Leaves* arising direct from the crown of the root, about half an inch broad at their base, about four inches long, smooth, milky green, and their edges often bent inwards, terminating in a sharp point. *Flower-stem* rather slender, about two feet high, round, very slightly furrowed, with four or five knots or joints, the chief part of its length inclosed in the sheaths of the leaves, the lower part of which is often purple. *Flowers* crown the stem in a loose, nodding panicle of scaly spikelets, of which the largest are nearly an inch long, and one-third of an inch broad at their base, tapering off to a flat-sided cone shape. When ripe these spikelets are of a very pale straw colour, and have a silvery luster, often slightly tinged with purple near their base ; stalks of the spikelets very fine : the *florets* are in two rows ; *calyx* of two unequal valves ; *ovary* almost hemispherical, with two points. It belongs to *Triandria Digynia* of the Linnæan System.

The earliest writer who mentions it as grown in England is Gerarde. He says it was then called "*Pearl Grass* and *Garden Quakers*, growing naturally in some parts of Spain, and it is sown yearly in many of our English gardens."

The term *Quaking Grass* has reference to the spikelets, which are in constant motion, being agitated by the slightest current of air, owing to their size, and the extreme delicacy and length of their stalks.

Parkinson, who wrote a few years later than Gerarde, says this Grass was given him by Clusius, the botanist, under the name of "the elegant Grass with Hop-like heads" (*Gramens elegans pululi glumis*), a very descriptive title, and, adds Parkinson, "It is now-a-days among our gentlewomen much esteemed to wear on their heads or arms, as they would do any fine flower or pretty toy to behold, as also to

put into wreaths and garlands that the country people make for their sports and pastimes."

Ray, writing about the same time, says, that when he sowed it in the spring it produced its flower-heads in August, but if he sowed it in the autumn they were produced in spring. He found it growing wild near Messina, in Sicily, and it is also a native of Italy and other parts of southern Europe.

It flourishes in any moderately fertile, loamy garden soil, and may be sown at either of the seasons mentioned by Ray. The seedlings from the autumn sowing are sometimes destroyed by severe winters.

The Quaking grass is quite ornamental in gardens, and much esteemed by ladies for dressing their flower-pots, as well as for a dried ornament in winter. A root or two requires but a little space.

THE BEGONIA.

In the whole vegetable world there is not a single family which repays the care and attention of the cultivator so well as the Begonia. There is not a single genus which combines so many good qualities; not one which, as our German neighbors would say, is so "grateful" for the pains bestowed upon it. The facility with which they can be propagated, (for anybody can strike a Begonia cutting,) their cheapness, generally speaking, and the simplicity of the treatment they require, render them general favorites. To write a long essay upon their cultivation would be simply an absurdity—almost amounting to an insult to the reader. All they require is a good, rich, open soil, and a warm, moist place to start them in—they do not care if it is a hotbed or a stove—and a snug greenhouse in which to flower. Give them these and they are satisfied—at least the greater part are so.

Some 350 species are known to botanists, but only about a third of the best of them are in cultivation. Some of these are remarkable for their graceful habit, such as *B. fuchsioides* and *B. Putziesii;* some for their delicious fragrance, as *B. odorata;* some for the time they remain in flower, opening one cluster after another continuously. I have known one plant of *B. nitida* which had two or three cymes of flowers *always* open, and sometimes more, for upwards of three years; and, for aught I know to the contrary, it may be in flower to this day. One cluster always remained till a new one was ready to take its place. Some species, like *B. manicata* and *B. urophylla*, produce a mass of flowers at one time; and as that time is early in the spring, these plants are very valuable for decorative purposes, or for cutting from for bouquets.

B. octopetala, which was one of the best in the whole family for winter blooming, has, I fear, been lost; at any rate I have inquired for it in all the London nurseries and public gardens without success. It may, perhaps, still be grown in some private garden; and if any person has really got it he would do good service to the country by placing it in the hands of some one who would propagate it to the utmost. It is a tuberous-rooted herbaceous species, (like the old *discolor* or the splendid *diversifolia;*) its flowers are pure white, large as an Anemone—larger, in fact, than any other species, and having, as the name implies, eight petals. It is a native of Peru, and was introduced some twenty years ago.

But the Begonia has other recommendations of which we have not yet spoken—the exquisite beauty of its variegated foliage, and the facility with which it can be hybridized. It is only about three years since *Rex* astonished the world, and now it is to be met with in almost every garden you visit, either in England or on the Continent. It is a market plant, purchasable for a few pence in all large cities from Paris to Moscow, from London to St. Petersburg. By crossing, it has already given rise to an almost innumerable progeny of vegetable genus. To develop the beauty of these variegated Begonias to the utmost, three things are necessary—heat, moisture, and shading. Let us mention a few of the best of this class.

B. splendida, young leaves like crimson velvet, but the plant is apt to become ugly as it reaches a large size. The variety called *B. splendida argentea* is not open to this accusation. It is really a magnificent thing, a pink tinge shining through the silver of the foliage.

B. Griffithii (still called *picta* in some gardens) is one of my greatest favorites, the various zones of color are so beautifully shaded the one into the other.

B. xanthia Reichenheimii, green bands follow the principal veins, the spaces between pure white.

B. xanthia lazuli, leaves copper colored, shining with a beautiful metallic lustre.

B. xanthia pictafolia, leaves copper col. with distinct large white blotches.

B. Queen Victoria, raised by Makay, the Belgian nurseryman, very delicate ; the leaf milk-white except a margin of green dots, and a few about the centre.

B. Prince Troubetzkoy, apparently a cross from *laciniata*, very distinct, the leaves dark in the centre, pea-green towards the margin ; footstalks and underside reddish.

B. argentea, the upper surface of the leaf quite white ; exceedingly delicate.

B. regina, only one step removed from *Rex*, the bands of color being rather more shaded off. In the same strain are *Miranda*, *Madame Wagner*, and *argentea guttata*, which are scarcely distinct enough from each other.

B. amabilis, the bright banded leaves very glossy and shining.

There are many others which have been raised more recently, of which the merits are less known, as only small plants are generally met with. Those most highly spoken of are *nebulosa*, *Ajax*, *nobilis*, *Victoria*, (different from *Queen Victoria*,) *grandis*, and others.—Karl, in *Cottage Gardener*.



EDITORS TABLE

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, &c., intended for the perusal of the Editor, and packages by Express, should be directed to the care of C. M. Saxton, 25 Park Row, New York. Exchanges should be addressed to "The Horticulturist."

Our readers have already been made aware of the change in the editorial department of the Horticulturist. Mr. Smith, in his "Card," has said, and well said, about all that is necessary on this point. He retires gracefully, and with the respect and good wishes of all; with ours especially. We have the satisfaction of knowing that his interest in the Horticulturist remains unabated, and that it will receive his assistance as far as time and circumstances will permit; and we venture to hope that his friends will be ours, and will coöperate with us as they coöperated with him. Mr. Smith expects to go abroad, and in this event we shall be favored with some valuable communications from him, embracing the most recent and interesting intelligence, gathered at the best points and from the best people.

Whatever pertains to the Publishers will be done in the most thorough manner, and they will spare no pains to make the Horticulturist one of the best and most useful publications of the day. With the assistance of some of the best talent the country can afford, they hope that its present high and well-earned character will be maintained, and that it will merit and receive a cordial and generous support from old friends and new.

We shall endeavor to keep our readers thoroughly posted in regard to all novelties as they appear, whether in this country or Europe. The world is progressing; improvements are daily being made in rural architecture and the construction of horticultural buildings; new modes of heating and ventilation are being introduced; and in all departments of rural taste we perceive a pervading spirit of activity and inquiry which must produce its fruit in due season. We shall help on this good work to the best of our ability, and hope to be cheered by the approval and coöperation of our friends. And thus, having said our "say," we retire to our "sanctum," wishing all our friends "A happy New Year!"

We would call the attention of our friends to the peculiar facilities afforded by the advertising columns of the Horticulturist. We shall hereafter place four advertising pages in front of the Magazine; these will possess most of the advantages of a cover page, and our charge will accordingly be at the rate of $15 per page. Advertisements should be sent in before the 20th of the current month.

Portable Heaters.—A few days since we saw at a friend's a contrivance which we think admirably adapted to supplying heat temporarily to a cold pit, and it may be used by the gardener under a variety of circumstances where a constant supply of heat is not needed. Our friend, unfortunately, is subject to attacks of that abominable complaint, the rheumatism; having experienced relief from the application of bottles of warm water, and finding the bottles unhandy, he had made several earthenware jugs resembling in shape horse-shoe draining tile, the bottom being slightly concave, so as to fit nicely to the leg; on the top is a neck for supplying the

hot water: if too warm, the temperature is moderated by wrapping the bottle in flannel. Now bottles of this kind, some two or three feet long, we conceive to be well adapted to cold pits, &c., when danger is apprehended from sudden and extreme changes in the weather; and these often occur. A couple of these bottles placed in a small pit, with the usual covering on the sash, would set Jack Frost at defiance. Indeed, we do not see why, with the aid of several such bottles of suitable size, a good many plants could not be kept in a growing condition during the whole winter, and furnish a good supply of flowers. A small under-ground greenhouse might thus be heated at a trifling expense, and be made available for something more than the mere protection of half-hardy plants. Camellias, Roses, Geraniums, &c., would thrive well under such circumstances. In severe weather the bottles would need to be filled night and morning, but the sashes should always be kept uncovered during the day. The intelligent gardener will perceive a number of circumstances under which these bottles can be made very useful, and we hope he will give them a trial. Any potter can make them. To the amateur we would especially commend them for the purposes above named. They are *not* patented, and the readers of the HORTICULTURIST can use them for the "rheumatics" or the pit at their pleasure.

W. T. C.'s communication has been received, and we have something on the other side; but at present we do not wish to open the "grape" question. At the proper time both sides can be heard. It is true that some still continue to plant the Isabella and Catawba mainly, and it is equally true that others, who have grown these extensively, are working their old plants with kinds which they conceive to be better. It is not denied by any, we believe, that the Isabella and Catawba are fine grapes; but the question is, are they the standard of perfection, and are we to be content with them, and cease striving after anything better? We think not. But we drop the matter for the present, simply reiterating the opinion heretofore expressed in the HORTICULTURIST, that we already have better grapes.

WE are not fairly in the traces yet, but when we get well harnessed we expect to go ahead at a lively gait. We think we could pull better with a good "pile" of subscribers on our back; at all events we should like to see it tried, and *now* is the time to do it. Will our friends take the hint?

OUR AGENTS in San Francisco, Cal., are Warren & Carpenter. Mr. J. Q. A. Warren, having formed a partnership with Mr. Carpenter, under the title of Warren & Carpenter, has removed from his former place of business to 167 Clay street, where they have constantly on hand the latest news and literary matter, received regularly by steamer.

The HORTICULTURIST may be found at their office, and we commend them to our friends in that part of the country.

CLUBBING.—We will furnish a copy of the HORTICULTURIST, and of the AMERICAN STOCK JOURNAL, devoted to the improvement of domestic animals, each one year, for $2 50. Specimen copies of either furnished gratis.

WILL the secretaries of the various horticultural and agricultural societies please send us a correct list of their officers for 1860?

THE quære of our Manchester subscriber will be fully answered in our next.

WE saw our friend MOORE of the *Rural* a few hours since, waiting for a plunge amid the Broadway "'buses." We tried to dissuade him from the rash act, but, with characteristic determination, he was bound to "go in," and so we left him. We have heard nothing of him since. We hope no untoward fate overtook him, and that he was not swallowed up in that "Maelstrom;" if so, then one of the best of papers has lost one of the best of editors; if *not*, the *Rural New-Yorker* may still be had for two dollars a year.

NEW ANNUALS.—Among those announced for 1860 we find the following: *Clarkia pulchella*, var. *integripetala*, (petal whole instead of lobed); a new *Hybrid Blue Sweet Pea*; *Callirhoe digitata*, (resembles the Scarlet Linum); *Œnothera biennis*, var. *hirsutissima*, (from California); *Dianthus chinensis laciniatus*, (grows two feet high, with flowers about four inches in diameter; colors various; in bloom from end of May till frost); *Dianthus chinensis Heddewigii*, (grows about a foot high; flowers about three inches in diameter, of various colors); *Anagallis grandiflora*, var. *Eugenie*, (light blue, shading from the centre to pure white at the border); *A. grandiflora*, var. *Napoleon III.*, (rich maroon crimson); *Nemophila discoidalis marginata*, (a variety of the *discoidalis*, with a white edge). We commend the above to the notice of our enterprising seedsmen, if they have not already secured them.

THE PARK FEVER.—We have had the Multicaulis fever, the Shanghai fever, and numberless others, and now we can plainly perceive strong symptoms of the *Park fever*. It is manifesting itself unmistakably in various parts of the country, and for our own part we are cruel enough to wish that not a village nor a city in the whole country may escape. Like the measles and chicken-pox, we think it would be a good thing for all to have it once, and in the *natural* way. New York is going through it kindly; indeed, is convalescing splendidly; and Brooklyn at last has got it "badly." Our neighbor over the river is not content with her churches and present suburban character, but is clamoring for, not *a* park, but a whole chain of them ten miles long! Now, we rather like that, and hope she may get them all. By all means keep the park fever "going."

THE MAXATONY GRAPE.—We have heard this grape spoken very highly of, but have never seen it. Can any of our readers give us any reliable information in regard to it?

HOW TO COOK LOCUSTS.—During the present year, we believe, the Locusts are again to make their appearance. Some of our readers may be fond of them; if so, here is the proper mode of cooking them:

"The locusts generally fly within two or three feet of the ground, and as soon as their approach is perceived, the people rush out, and with great clamor endeavor to strike them down, or inclose them in their lambas, while the women and children gather them up in baskets from the ground, and detach their legs and wings, by shaking them from one end to the other of a long sack, in the same way that grocers clean their raisins. The legs and wings are then winnowed away, and the bodies dried in the sun, or sometimes fried in fat, and then kept in sacks for food, or sent to the markets for sale. In some parts of Ankova and in the provinces of the Betsileo to the southward, grasshoppers and silkworms, in the chrysalis state, are collected in large quantities, cooked and eaten as food, or offered for sale."—*Ellis's Madagascar*.

THE BOWOOD MUSCAT GRAPE.—The new grapes having been somewhat extensively introduced into this country, our readers will be glad to obtain all possible reliable information in regard to them. The following remarks on the Bowood Muscat, respecting the merits of which some doubts have been entertained, will be read with interest:

"On visiting Shrubland last week I was struck with the prolific character of this grape, which is cultivated there in pots, among Black Hamburghs and Sweetwater, and in every case had set better and produced more bunches than either of those kinds, and under very adverse circumstances, having the worst position in the house—near the door. I learned from Mr. Foggo that little or no artificial heat had been given; in fact, only one pipe ran round the house, and it was equally forward with the other sorts. I have not the slightest doubt that it is as hardy as the Sweetwater. The whole of the plants I saw had from six to nine good-sized bunches of well-formed berries, which differ very little in appearance from the Muscat of Alexandria but possibly the habit is not quite so strong. Of course they were not ripe, but having tasted

this sort frequently, I can pronounce it to be of very superior excellence. I can strongly recommend its introduction where a hardy prolific Muscat-flavored Grape is required."—JAMES CUTBUSH, *Highgate Nurseries.*

SALTS.—The day has long passed when it was disputed whether saline bodies are promotive of vegetable growth. It is now determined that some plants will not even live without the means of procuring certain salts. Borage, the Nettle, and Parietaria, will not exist except where nitrate of potash is in the soil; Turnips, Lucerne, and some other plants, will not succeed where there is no sulphate of lime. These are facts that have silenced disputation. Still there are found persons who maintain that salts are not essential parts of a plant's structure; they assert that such bodies are beneficial to a plant by absorbing moisture to the vicinity of its roots; or by improving the staple of the soil; or by some other secondary mode. This, however, is refuted by the fact that salts enter as intimately into the constitution of plants as do phosphate of lime into that of bones, and carbonate of lime into that of egg-shells. They are part of their very fabric, universally present, remaining after the longest washing, and to be found in the ashes of all and any of their parts, when subjected to incineration. Thus Saussure observes, that the phosphate of lime is *universally* present in plants.—(*Sur la Véget.*, c. 8, s. 4.) The *sap* of all trees contains acetate of potash; beet root contains malate and oxalate of potash, ammonia, and lime; rhubarb, oxalate of potash and lime; horseradish, sulphur; asparagus, super-malates, chlorides, acetates, and phosphates of potash and lime; potatoes, magnesia, citrates, and phosphates of potash and lime; Jerusalem artichoke, citrate, malate, sulphate, chloride, and phosphate of potash; garlic, sulphate of potash, magnesia, and phosphate of lime; geraniums, tartrate of lime, phosphates of lime, and magnesia; peas, phosphate of lime; kidney beans, phosphate of lime and potash; oranges, carbonate, sulphate, and muriate of potash; apples and pears, malate of potash; grapes, tartrate of lime; capsicums, citrate, muriate, and phosphate of potash; oak, carbonate of potash; and the lilac, nitrate of potash. Let no one fancy that the salts are a very trivial portion of the fabric of plants. In the capsicum, they constitute one-tenth of its fruit: of carrot juice, one-hundredth; of rhubarb, one-eleventh; of potatoes, one-twentieth; while of the seed of the *Lithospermum officinale* they actually form more than one-half.

CATALOGUES, &C., RECEIVED.—The *Gardener's Monthly* for December is at hand, as sprightly and as fresh as ever. We wish Mr. Meehan all the success he deserves.

The *Michigan Farmer*, (weekly,) edited by R. F. Johnstone, and published at Detroit, comes to us this week enlarged to a folio. We take this as an evidence of increased success which it well deserves. It is brimful of just such matter as the farmer and horticulturist most need, with a nice corner for the ladies.

The Homestead greets us weekly with its fund of useful and entertaining matter. It is an old friend, and is conducted with spirit and ability.

The *California Culturist* for October is on our table. It contains much useful and readable matter, and gives us a pleasing picture of the enthusiasm of our California confrères. A large part of the present number is well taken up with the proceedings of the California Horticultural Society and Fruit Convention. Go ahead, gentlemen.

Descriptive List of Dutch Bulbs and other Flower Roots, with full directions for culture. B. K. Bliss, Springfield, Mass. Full and complete.

AMERICAN STOCK JOURNAL.—We have received the first number of the second volume of this fine monthly. It is ably edited by D. C. Linsley, and abounds in practical information pertaining to the breeding, keeping, diseases, &c., of all kinds of domestic animals, and will be useful to a large class of our readers. We shall not hereafter deem it beside our purpose to

notice periodicals devoted to arts kindred to our own. We have elsewhere added a list of the various Agricultural and Horticultural periodicals of the day.

Correspondence.

THE following from Mr. Downing, correcting a statement of his in the January number for 1859, seems to us conclusive as to the distinctness of Hyde's Eliza and York Madeira, and we shall therefore have one synonym the less, and this is a great point gained:

HYDE'S ELIZA GRAPE.—In the article on Grapes in the January number of the HORTICULTURIST for 1859, I said that *Hyde's Eliza*, as received from two or three sources, was identical with York Madeira; but the past season I have ascertained to a certainty that they are distinct: the vine is of more vigorous growth, the bunch and berry larger, being somewhat like the Isabella, but a week or two earlier; it is not quite equal to it in flavor, although preferred by a few. Canby's August and Baldwin I still think are synonymous with York Madeira.

CHAS. DOWNING.

MR. EDITOR:—In the October number of the HORTICULTURIST for the year 1858, page 448, you published an account of a huge grape-vine. A short time ago, while I was engaged in a surveying expedition, my attention was called to a vine of so large a size I thought at the time it exceeded anything I had ever read of. But recollecting the account of the one in New Jersey, I turned to it, and it beats our Kentucky vine a little in circumference. I had no tape line with me, but measuring a string, we found it to be five feet eight inches in circumference five feet from the ground; and it seems to be the same size for twenty feet, where it is decayed, and the trunk appears to have been broken. Numerous strong branches put out from the huge body, holding it to its place; they cover a large black walnut. I did not inquire whether the vine bore or not. This vine is growing on the farm of Mr. Furna A. Cannon, in the Walnut Bo t tom near the Ohio river, about two and a half miles above the town of Mount Vernon, Ind.

About half a mile from the vine, Mr. Cannon showed us a sycamore tree, hollow at the ground, into which the hogs go for shelter in winter, and on one occasion he with another person stopped up the hole or entrance, and had thirty-six hogs inside the tree; it is proper to say some of them were small.

Hoping the account of these giant productions of our rich alluvial bottoms may not be uninteresting to you, I remain, yours respectfully, WALTER A. TOWLES.

Henderson, Ky.

[The Kentucky vine will do, but leaves New Jersey a little ahead. Kentucky, however, must have the palm on "pig-pens!"—ED. H.]

THE AMPELOPSIS OR VIRGINIA CREEPER.—What a magnificent plant this is! I do think that it is one of the most beautiful things in the country, although its flowers *are* of little or no account. Several years since, when the borer was destroying the Locust trees in this vicinity, (of which but few escaped,) there was one tree, which, standing upon the south side of the house, afforded a shade to several windows, and could not without much inconvenience be dispensed with. Looking upon its destruction as pretty certain, however, I proposed removing to it an Ampelopsis of some antiquity, which stood in a not very suitable spot, with the expectation that the vine would mantle the dead branches, and afford some shade until another tree could be reared. The creeper was removed with perfect success; its stem—nearly or quite an inch in diameter—was twined about the trunk and principal branches to the height of perhaps twenty feet, and moderately pruned. The experiment was so entirely successful, that by being envel-

oped in the broad foliage of the vine, the tree was saved from the ravages of the insect to such an extent that it only lost a part of its top, and is now in fine health, the only survivor of a large number of equal age: nor is this all. The Ampelopsis has grown with the greatest vigor, notwithstanding it was planted within four feet of the tree, and now overruns nearly the whole of the latter, hanging in masses and festoons from the higher branches, a perfect wilderness of foliage. I do not hesitate to say that it is the most beautiful object on the place, its young shoots, with their small and delicate light green leaves, forming a remarkably fine contrast to the immense foliage of the darkest green, which clothes the old wood. In addition to this, the gorgeous appearance of the whole mass after the October frosts have changed the different shades of green to the most brilliant and varied tints of crimson, scarlet, and yellow, is beyond my powers of description.

Its culture is the most simple: when young it should have a moderately rich and light soil in which to establish itself, for I think much depends upon giving it "a good start." The young shoots should be trained with some care to the surface which they are to occupy, whether of wood, stone, or brick, (the latter is perfectly appropriate). After they have become firmly attached, which they will soon do, if undisturbed, the plant may be left mostly to itself, watering well once or twice, if dry, and occasionally training a rambling shoot "in the way it should go." E.

[We know nothing to take the place of the *Ampelopsis hederacea*—it is so rapid in its growth, so thoroughly a *shade vine*, and so tractable as to produce an immediate effect. We find it at the north, and frequently far down in Southern states. The *A. bipinnata*, or Pepper-vine, which we have also cultivated, is hardly less beautiful, having a red tinge on its new growth; it requires something like an arbor or strings to cling to by its grape-like tendrils, and is very useful for an arch.—Ed. H.]

Does Cold Kill the Privet?—The Privet has been a favorite hedge plant, in Buffalo, for many years, and previous to the extremely cold winter of 1854-5, there were many hedges of it which had attained a large size, some of which in beauty were scarcely to be surpassed by anything short of the Maclura. In the succeeding spring some persons discovered that their hedges were very late in pushing, and upon closer examination very many of the plants were apparently killed to the ground. In our own grounds, a short hedge of about four feet in height was taken up, cut down to about four inches, and replanted in another spot. The plants nearly all survived, but having been neglected, made little growth. Other hedges, after lingering for some weeks, eventually came into leaf, while some again either wholly or in part died.

Succeeding this came another cold winter, and again the hedges "caught it," so that of those which survived the former winter, few went through the summer without showing some indications of hard usage. In some instances, the plants were killed in spots, as if injured by an insect. In others the extremities were affected, while a few, not more sheltered, apparently escaped with little or no injury. This feature puzzles me: I have had suspicions that an insect might have something to do in the matter, but upon examining (not very scientifically, however) the plants, both dead and alive, I could detect no indications of the presence of any such foe. Remarkably fine standard plants have been gradually dying since, and are now defunct, and of the hedges I do not know of one (of any age) which has not been more or less injured.

Now, Mr. Editor, we have always been accustomed to consider the privet as hardy as the oak, and it has, I think, heretofore, so proved; but it appears that we have been greatly mistaken. I should much like to know if the experience of other parts of the country is similar to our own; and whether, in past years, there has been any complaint of a like nature. If the privet can not be relied upon as a hardy plant for ornamental hedges and screens, the multitudes who have already planted it for these purposes will be greatly disappointed. Juvenis.

[We have heard of no similar instances of injury to the Privet from cold, notwithstanding

the severity of last winter, and are inclined to regard the cases presented by "Juvenis" as of a purely local character. We should be sorry to know that the Privet was not an entirely hardy plant.—Ed. H.]

For Market Purposes.—Your excellent article under this caption, Mr. Editor, contains precisely my own views on the subject, and I am quite rejoiced that you espoused what I consider the right side of the question. I long since became disgusted with the immense quantity of *talk* which has been lavished upon "fruits for market" and "fruits for cooking," both *in* and *out* of the conventions, the former term being translatable into "large, flavorless fruit, which bears well," and the latter "a fruit which is inedible in a raw state," both classes being utterly unfit to be eaten or cultivated in any civilized community. This system of occupying one's ground and attention with trees bearing poor fruit, merely because they *do bear*, seems to me very absurd. There are many varieties which are good both for eating at home and selling in market, and free bearers withal. So, too, in respect to culinary purposes. The commonly received opinion that a fruit can not be cooked unless unfit for anything else, is very erroneous, and I have satisfied myself and others to the contrary. For instance, the Duchesse d'Angoulême pear, which I have never heard spoken of as "a cooking fruit," is nevertheless capital for that purpose, while yet hard, and the same is true of many others. No one need look for better "cooking apples" than the Fall Pippin, Baldwin, R. I. Greening, and other table varieties. In the case of a variety which will keep for an unconscionable length of time, or is fit for cooking remarkably early, I would make exceptions, but am strongly in favor of discarding nearly the whole tribe of "cooking" and "market fruits," as commonly so called, without the least remorse.

The theory that a fruit, to be salable, must be, if not flavorless, of indifferent quality, is not founded upon fact. The true state of the case is, that there being but rarely any other than such fruits in the market, people are compelled to purchase them or none. I question if any fruit ever had a more widely spread popularity or was more eagerly sought for, than the White Doyenné pear—the Virgalieu of the New York markets. This certainly is not "a market fruit" in the common acceptation of the term, but of the very first quality, when well grown, and that it "cooks well" I can testify.

One of the finest of the subacid cherries, the May Duke, has no superior for cooking, and the Imperial Gage is a capital substitute for the coarse tough White Magnum Bonum plum, as a preserve. Let us then, Mr. Editor, commence a war of extermination against poor fruits "for market purposes:" continue to wield your influential pen in the cause, and we shall see if *good* will not triumph over *evil* in the end. Yours, A Buffalonian.

["A Buffalonian," on the whole, is about right; still we could hardly make up our mind to "cook" the Duchesse. She is too good, and at present, and until more extensively cultivated, too valuable, to be devoted to such a purpose.—Ed. H.]

Editor's Drawer.

We shall try to keep the "Drawer" filled with choice scraps from the foreign and domestic press. If, hereafter, any thing not very useful or interesting finds its way here, the reader may take it for granted that we have been indulging in an editorial "nap."

Influence of Air on the Soil.—It has been seen that the influence which the atmospheric forces exert upon the soil is various and extensive. Their action, indeed, is not rapid nor

energetic, and a very perfect exposure of the soil is necessary to catch much of the ameliorating influence. It is not, therefore, to be expected that a barren soil can be rendered fertile by mere exposure to the air, although it were wrought with a perfection that would have satisfied even Jethro Tull. The importance, however, of taking advantage of the manifold benefits to be derived from the air, it is hoped, has been rendered evident in the course of this paper. It needs scarcely perhaps be said that stagnant water will completely prevent any benefit that is to be looked for from this source, and that in the case of wet land its drainage must first of all be thoroughly effected. The ground being dry, and the rain consequently enabled slowly to filter through the soil, the full benefit of the atmospheric waters will be obtained. Unless in the case of sloping grounds, little rain water should run off the fields; almost the whole ought to sink gradually through the soil as it falls. In order, however, to gain the utmost advantage from the frosts and atmospheric influences, as great a surface should be exposed to the air as possible; and the best way to effect this would seem, in the case of ground under tillage, to be to have the soil plowed up into ridges like potato drills, and to leave it in this shape through the winter—a practice of which the advantage is well known to gardeners. Sir Joseph Paxton, for instance, advises that "the surface of all strong land should be laid up in ridges during the winter, as the action of frost, by expanding the moisture in it, leaves it when thawed in a fine pulverized, friable, or loosened state, by which it is rendered fertile, and ready immediately after levelling in favorable weather to receive the intended crop." Many other benefits, however, than those of the frost, will result. Are the oxygen, ammonia, carbonic acid, nothing? Let the agricultural mind, therefore, be of good cheer; the atmosphere is a force everywhere present; although his farm may be like Justice Shallow's, "barren, barren," he has at least this consolation—"Marry, good air!"—T. F. JAMIESON *of Ellon*, in the *English Agricultural Society's Journal*.

RAILWAY TRAVELLING AND MUSHROOMING.—"I was travelling last week," writes a correspondent, "by a railway on the English side of the borders of South Wales, when we happened to pass a field spangled with a most luxuriant growth of mushrooms. I had hardly remarked the circumstance to my companion, when we felt the train suddenly stop, and looking out to the front, we saw, to our astonishment, the driver jump off the engine, vault the fence, and proceed to fill his hat with the treasure. In a moment the guard was over the fence, following his example, which, as may be supposed, was infectious, for in less than half a minute every door was thrown open, and the field covered with the passengers, every one of whom brought back a pretty good hatful. Not till this desirable result was attained, did we proceed on our journey, some of us wondering whether we had been dreaming, and whether, instead of the Welsh border land, we were not travelling by some newly constructed forest line in the far West of America. We begged the guard, who didn't seem quite comfortable about the joke, to have the place entered for the future in his line of route, as the "Mushroom Station."—*Guardian*.

[This, certainly, is a pleasing picture of railway travel in England, and reminds us of a railway that used to run between Hudson and Berkshire, which on one occasion, we remember, stopped to enable one of the passengers to pick up his hat!—ED. H.]

REMARKABLE CONIFERS.—Few persons, I imagine, have had the opportunity of beholding finer specimens of the Cembra Pine and of Abies Canadensis (the Hemlock Spruce) than those now growing in the pleasure grounds at Osberton Hall. The Pinus Cembra is nearly 50 feet in height, and measures, at 20 feet from the ground, 60 feet in circumference, and the trunk at bottom girths 8 feet. Few of the Pinus tribe are more beautiful than this; its handsome conical shape, and short rigid horizontal branches, combined with its color, render it particularly attractive. It certainly deserves more extensive cultivation than it receives, for, planted as a single specimen, it is really magnificent. Opposite this tree stands the Hemlock Spruce above alluded to; its height is nearly equal to that of Cembra, and it measures at one yard from the

ground 160 feet in circumference; its graceful boughs bending down to the ground and forming one of the most delightful objects I ever saw. Both specimens are in the best of health and growing vigorously. The soil these trees are in is very light, and the subsoil sand and gravel.—EDWARD BENNETT, *Gard. Chron.*

FARFUGIUM GRANDE.—For the next few years this will be the most popular plant among the fancy variegated-leaved plants, because it is, like *Isolepis gracilis*, everybody's plant; a plant for the queen's drawing-room, and which will also do for the rooms and windows of all her majesty's subjects in the British isles; likewise for their rock gardens, wilderness dingles, and all fancy works in roots, stones, and all manner of rustic work. That is to say, provided it is kept on short commons at the roots, and not too much exposed to the sun; but above all, that every slug, and snail, and nibbling creature, within its reach, be caught and "killed as dead as a hammer," before the plant is risked out of doors.

But it is as a pot plant, and a trade plant in pots, that it will be most valuable and valued. It will be in Covent Garden Market this time next year at sixpence a pot, as sure as my name is Donald; there is no reason to prevent *Farfugium grande* from becoming a "state plant" in the markets of Great Britain and Ireland, in less than two years from the time it was sold for from two to three guineas a plant.—*Cottage Gardener.*

BED-ROOM DECORATION.—We condense the following from the *Cottage Gardener*. It presents a pleasing picture which we should be glad to see more common. We think we can see woman's hand in it all.

"Oh, give him taste! It is the link
Which binds us to the skies—
A bridge of rainbows thrown across
The gulf of tears and sighs;
Or like a widow's little one—
An angel in a child—
That leads him to his mother's chair,
And shows him how she smiled."

To show you that the admission of vegetable life into bed-rooms is more in vogue than formerly, I will give you a rough sketch of such an apartment which I was privileged to enter, and have permission to describe. The occupier of this apartment recognizes the principle, that

"Whatever cheerful and serene
Supports the mind, supports the body too."

At the end of the room is the window with balcony, from which spring clusters of blossoms of intermingled *Calystegia pubescens* and *Tropæolums*. These run up either side of the window on lattice-work. From an ornamental *terra cotta jardiniette* rise plants of *Lysimachia nummularia*, covering a wire-work screen with their golden blossoms. Fronting the window are the toilette-table, glass, &c. In the first break on the left hand side of the room is the washhand-stand; over this engravings and pictures in oil colors, &c., &c. The middle projection contains a gas stove with flue entering the chimney; above this the mantel-piece. At each end is a case of Ferns and Mosses arranged amid rockwood, colored scenery at the back imparting an additional charm.

Over one of these cases we find the lines—

"The green and graceful fern,
How beautiful it is!
There's not a leaf in all the land
So beautiful, I wis.

"Have ye e'er watch'd that ball unfolding,
With each stem and leaf wrapp'd small,
Coil'd up within each other
Like a round and hairy ball?

"Have ye watch'd that ball unfolding,
Each closely nestling curl,
And its fair and feathery leaflets
Their spreading forms unfurl?

"Oh, then most gracefully they wave
In the hedges like a sea,
And dear as they are beautiful
Are those fern leaves to me."

Over the other case—

"The tiny moss, whose silken verdure clothes
The time-worn rock, and whose bright capsules rise,
Like fairy urns, on stalks of golden sheen,
Demand our admiration and our praise
As much as cedars kissing the blue sky
Or Krubul's giant flower. God made them all,
And what He deigns to make should ne'er be deem'd
Unworthy of our study and our love."

Between the cases is a duplex statue in plaster, and amid the centre ornaments a bouquet of choice flowers.

Over the mantel-piece are views of the localities in which the Ferns were collected—Llangollen Vale, Tenby, &c. Above up to the ceiling are photographic and lithographic portraits, surmounted by the Art Union head of Christ.

In the next break we find pictures printed in colors, and a heating flue in connection with a system of hot-water apparatus. Lastly, next the door is a table with Wardian case, containing Ferns and Mosses, many of them exotic.

"Of all modes of enlivening the aspect of an apartment there is, perhaps, none more pleasing than the sight of plants and flowers suitably arranged and distributed. The enjoyment and instruction they afford are within the reach of all; the poor may partake as well as the rich. Great means and appliances are not needed. To the thoughtful mind the contemplation of the phenomena of vegetation is a constant source of interest." Especially is this so to the Christian. Whatever he finds

"Of beautiful or grand
In nature, from the broad, majestic oak
To the green blade that twinkles in the sun,
Prompts with remembrance of a present God."

E. A. C.

Purifying Water.—In every age, and in every hot climate, from the healing of the waters of Marah until the present time, some vegetable has been employed to render noxious water palatable. In some parts of Ceylon, especially in the neighborhood of the coast, where the land is flat and sandy, the water is always brackish, even during the rainy season, and in the dry months it is undrinkable. The natives then make use of a berry for cleansing it and precipitating the impurities. I know the shrub and the berry well; but it has no English denomination, (qy. *Strychnos potatorum*?) The berries are about the size of a very large pea, and grow in clusters of from ten to fifteen together, and one berry is said to be sufficient to cleanse a gallon of water. The method of using them is curious, although simple. The vessel which is intended to contain the water, which is generally an earthen chatty, is well rubbed on the inside with a berry, until the latter, which is of a horny consistence, like vegetable ivory, is completely worn away. The chatty is then filled with the muddy water, and allowed to stand for about an hour or more, until all the impurities have precipitated to the bottom, and the water remains clear. I have constantly used this berry; but I certainly cannot say that the water has ever been rendered perfectly clear. It has been vastly improved, and what was totally undrinkable before has been rendered fit for use; but it has, at the best, been only comparatively good: and although the berry has produced a decided effect, the native accounts of its properties are greatly exaggerated.—*Baker's Ceylon.*

On Trees and Tree-Boring Insects.—It is commonly believed that insects eat through the bark of healthy trees, and then enter the wood itself. I have already stated that this is not my belief. The workings of boring insects would not shorten the life of a tree, by consuming a portion of the wood, provided there were enough of wood left to ensure the tree against the formidable assaults of the wintry blast. And, as for the bark; if the tree were

healthy, every hole which the insect had made through it would be repaired in due time by the fostering hand of nature.

During the proper season for increase of new wood, it is invariably formed at the periphery; and it steadily rolls on over the old wood already made. Insects do not possess the power of raising up the bark from the wood. The borers merely perforate it. When we discover different insects lurking between the bark and the wood, we must not accuse them of mischief; but we must attribute the separation of the two component parts of a tree either to some injury from without, or to disease from within. The insects assemble there merely for safety and comfort.

Bark once separated from the wood, which it has covered, will never more adhere to it. The disaster which the separation has made evident can only be repaired by new bark; and this new bark will appear exactly at the place where the effect from the accident has ceased, or where the internal disease has worn itself out. No actual renovation of wood ever takes place after the wood itself has once been formed. Holes made in it will always be holes; and they will retain their original shape and size, so long as the tree itself exists.

Now, if you take a butcher's knife, and cut your way deeply into the bowels of an animal, (an ox, to wit,) the animal in a minute or two will be as dead as Julius Cæsar. Not so with a tree. You may use your axe, and hew out two-thirds of the bole of a tree, without destroying its vital powers. In the course of time Dame Nature from without, by her admirable process at the periphery, will assist the tree in its need, and eventually will heal the gaping wound.

So that I am never much alarmed, or down in the mouth, at huge limbs being torn from the trees by the raging winds. Their loss of limbs is undoubtedly very great in some cases, and gives an unsightly appearance to the trees. Still these trees will live on, be the extent of the accident what it may. I am speaking of healthy trees only.

But when I examine a magnificent tree, with round holes made by the insect through its bark, oh, dear me! I shake my head in sorrow—my very heart misgives me, and I exclaim, "Grand ornament of our groves and lawns, it is nearly over with thee. Thy 'days are dwindled to the shortest span.' Some dire disease must have tainted thy once healthy juices, long before the Scolytus applied for a residence within thee. Should the wants of the oven-man not demand thee for the present, thou mayest yet remain erect for some time to come. But, of this be certain—that, although thou hadst no attractions for the boring-insect in thy day of health, believe me, now that thou art sick and feeble, he is sure to pounce upon thee; and he will ultimately bring thee to the dust in useless ruins; and that, too, at the very time when all the neighboring trees are vigorous around thee—setting thy keen devourer at defiance."

I invite the anxious reader to pay attention to any tree at which the Scolytus is pursuing his ordinary calling. Then, let him examine the same tree during the following summer, and he will find the little round holes in the bark, just as the insect had made them, without any alteration whatever. After this, let him take a gimlet, and bore as many dozens of holes as he may think fit in the sound bark of some undeniably healthy trees. Let him visit these in the course of the next summer, and he will perceive every gimlet hole made up, by new bark underneath the old bark.

This being the case, I trust it would tend to convince him that, while the Scolytus singles out some sickly tree wherein to form a lodgment for his wife and children, he knowingly neglects a healthy one.—CHARLES WATERTON, *Walton Hall.*

TO EXCLUDE FROST FROM A COLD PIT.—I have been accustomed to exclude frost from my only erection, a cold pit or frame, for three winters, by a very simple and inexpensive piece of apparatus, an account of which may be useful to some one of your readers, who, like myself, cannot avail himself of anything more costly in the way of a heating apparatus. It is simply this—a tin box nine inches square, the top made to lift off and put on like the lid of a canister, air-tight.

This is fixed in one of the front corners of the pit; a small pipe enters the bottom of the box, a quarter of an inch in the diameter of its bore, and an inch tin pipe runs from near the top of the box along the front of the pit, going through the end wall where it makes a turn upwards for six inches. The lid is taken off by a stout flange which runs along the sides, and the top is flat; on this a plate of iron twelve inches square, and about a quarter of an inch thick, is laid, which, when heated, gives off heat enough to keep up the temperature quite sufficient to preserve the plants from injury during a sharp frost, as I have several times experienced. The heating is effected by burning three or four night-lights (such as are sold in boxes, and consist of a wick passing through a thin slice of cork). A small tin vessel is placed inside the box, and serves to hold the oil: when lighted it will burn all night without any further attention. As there is no door to the apparatus, it is impossible for any injurious gases to escape inside the pit; the lid fits on tightly, and the air which circulates along the pipe enters through the bottom of the box at one end of the pit and passes out at the other, affording additional warmth, while little or no heat is lost. The cost of maintaining it in action is very trifling, and I have been able to preserve my plants beyond my expectation.—T. R. W.

Climatology.—A strikingly equable climate is found at Penzance in Cornwall; it is the garden of the English vegetable markets, producing green peas in May, and every vegetable growth at early dates; in this respect it is in advance of Norfolk, Virginia, Penzance being at the 50th parallel, and Norfolk at the 37th. The distance of latitude thus exceeds 900 miles between points corresponding in vegetable growths for three months of spring. In that part of England trees and plants which are natives of tropical climates often remain in the open ground through the winter without injury. Oranges, lemons, myrtles, camellias, magnolias, the Mexican Agave, &c., require no protection from frost, and in sunny exposures are grown in the open air. Yet these fruits are difficult to ripen, and the apricot and plum generally produce nothing; the grape rarely ripens, currants are acid, and the apple rarely comes to perfection. This is due to the low temperature and humidity there in contrast with our tropical summer, to which we owe our Indian corn no less than our melons and small fruits. In the West of England a floor of stone is almost always wet; in Ireland a wet piece of leather placed in a closed room will not dry in a month.

The uplands of Georgia, and the interior northward to Pennsylvania, have some resemblance to France in various points of cultivable capacity, and the averages of temperature would appear to confirm this more strongly than a further analysis will bear the comparison out; it is alternately too dry and too wet, too warm and too cold. The delicate lucerne, &c., fail here, and the finer varieties of grapes and olives also fail. But the Indian corn, tobacco, and cotton are adapted to this state of the climate, and the success is great. The shades of climate are a study in themselves; we hear at one time of tea in S. Carolina, and of other novel things elsewhere, but the acclimation of plants is a delicate operation. A colony of Greeks, from Smyrna in Asia, long since established themselves on the east coast of Florida, lat. 29°, a point far south of their native place, which is in latitude 38° 26′. They planted the orange and other tropical fruits, but now a few remnants only are left; the changes of temperature there are sometimes very severe. Near the Gulf of Mexico there is a tendency towards the development of a summer rainy season, and at New Orleans the characteristics of such a season are often strongly marked, the morning of each day being clear, but heavy rains setting in as the heat attains a high point. These always greatly lower the temperature, and cease in the evening.

Fruit of the Eugenia Ugni and Fuchsia Corymbiflora.—Great expectations were at one time formed in regard to the value of the fruit of *Eugenia Ugni* for the dessert; these

expectations have not, we believe, in this country at least, been realized. Our own experience is rather against it; it fails to satisfy us in this respect, and is not very highly esteemed in England, s we gather from what follows:

"As the fruit of *Eugenia Ugni* has attained a somewhat important feature from the fact of a prize being offered for it at the late Horticultural Show in London, it may be as well here to explain to the inexperienced what this fruit really is. As a new dessert fruit is a matter in which every one must feel an interest, and every one not being in possession of the tree, or, perhaps, not knowing what it is like, it may be well here to describe it.

"The *Eugenia Ugni* is a small-leaved evergreen shrub, apparently of slow growth, its foliage somewhat like the common Box tree, but I believe not very hardy. The fruit, of which so much was expected, is anything but handsome, being, in fact, as like the common Haw as anything else, and, though larger than the commonest of all, is not so large as those of the fancy kinds of that commonest of all fruit; but in color and largeness of eye it very much resembles the Haw. Now, a fruit with no great pretensions to appearance ought to have some good qualifications to entitle it to a place at table, and I am far from denying this its due in that respect, for its flavor is to my taste far from disagreeable; on the contrary, if the fruit was larger, I think it might become a favorite. There is a sort of richness about it which I have not found in anything else, and on the whole I like it better than some fruits that are occasionally sent to table, as the Passion fruit, Plantain, &c.; but its diminutive size and appearance are a defect not easily got over, and it is likely most people will feel dissatisfied with it after seeing it once. As a plant, however, it is worthy of attention, and it would seem to be well fitted to cover a low wall, it being on a situation of that kind that I have it growing, facing the south; the few berries there were ripening the middle of September.

"In its present condition the fruit of *Eugenia Ugni* is certainly inferior in point of appearance to that of several of the Fuchsias, and the latter are, I believe, equally wholesome and agreeable, the best bearing one being *Fuchsia corymbiflora*, which, if cultivated for its fruit, might be made both a useful and ornamental object, and its juicy berries of a dark plum-color might find themselves many friends. *F. fulgens* is equally fruitful, but the fruit is less showy, being a yellowish green; but these fruits are certainly as much entitled to attention as that of Eugenia, and possibly may get it when the failure of the other becomes patent."—J. ROBSON, in *Cottage Gardener.*

CHINESE MODE OF TAKING HONEY.—During my sojourn in this place, I had an opportunity of witnessing a novel mode of taking honey from bee-hives. The Chinese hive is a very rude affair, and looks very different to what we are accustomed to use in England; yet, I suspect, were the bees consulted in the matter, they would prefer the Chinese one to ours. It consists of a rough box, sometimes square, and sometimes cylindrical, with a movable top and bottom. When the bees are put into a hive of this description, it is rarely placed on or near the ground, as with us, but is raised eight or ten feet, and generally fixed under the projecting roof of a house or outbuilding. No doubt the Chinese have remarked the partiality which the insects have for places of this kind when they choose quarters for themselves, and have taken a lesson from this circumstance. My landlord, who had a number of hives, having determined ne day to take some honey from two of them, a half-witted priest, who was famous for his prowess in such matters, was sent for to perform the operation. This man, in addition to his priestly duties, had the charge of the buffaloes which were kept on the farm attached to the temple. He came round in high glee, evidently considering his qualifications of no ordinary kind for the operation he was about to perform. Curious to witness his method of proceeding with the business, I left some work with which I was busy, and followed him and the other priests and servants of the establishment to the place where the hives were fixed. The form of the hives, in this instance, was cylindrical; each was about three feet in height, and rather wider at the bottom than the top. When we reached the spot where the hives were placed, our

operator jumped upon a table placed there for the purpose, and gently lifted down one of the hives and placed it on its side on the table. He then took the movable top off, and the honeycomb, with which the hive was quite full, was exposed to our view. In the meantime an old priest, having brought a large basin, and everything being ready, our friend commenced to cut out the honeycomb with a knife made apparently for the purpose, and having the handle almost at right angles with the blade. Having taken out about one-third of the contents of the hive, the top was put on again, and the hive elevated to its former position. The same operation was repeated with the second hive, and in a manner quite as satisfactory. But it may be asked, "Where were the bees all this time?" and this is the most curious part of my story. They had not been killed by the fumes of brimstone—for it is contrary to the doctrines of the Buddhist creed to take away animal life—nor had they been stupified with fungus, which is sometimes done at home; but they were flying about above our heads in great numbers, and yet, although we were not protected in the slightest degree, not one of us was stung, and this was the more remarkable, as the bodies of the operator and servants were completely naked from the middle upwards. The charm was a simple one; it lay in a few dry stems and leaves of a species of Artemisia (Wormwood) which grows wild on these hills, and which is largely used to drive that pest, the musquito, out of the dwellings of the people. This plant is cut early in summer, sun-dried, then twisted into bands, and it is ready for use. At the commencement of the operation which I am describing, one end of the substance was ignited and kept burning slowly as the work went on. The poor bees did not seem to know what to make of it. They were perfectly good-tempered, and kept hovering about our heads, but apparently quite incapable of doing us the slightest injury. When the hives were properly fixed in their places, the charm was put out, and my host and his servants carried off the honey in triumph.—*Fortune's China.*

Culture of the Petunia from Seed.—The improvement of the Petunia is now justly receiving marked attention, and no plant better merits it. For show, the Petunia, in our estimation, is one of the most valuable bedding plants we have. Thus far, American seedlings surpass those of foreign introduction in all the elements of a good flower. We saw some seedlings from Mr. Isaac Buchanan last fall, of great beauty; but the end has not been reached yet. The following is one mode of raising seedlings:

"It is but within these last ten years that this class of flowers has been brought into general notice, and during that time great improvement has taken place in the symmetry and substance of the blossoms, which has added much to their beauty, and rendered them still more attractive. The present mode of cultivating them as specimens, together with the peculiar fragrance they possess, unlike any other plant in cultivation, has deservedly won for them a place in the conservatory and the greenhouse, as well as the flower-border, where, under proper treatment, they form a conspicuous and interesting feature, when studded with their noble blossoms of varied colors. The following successful mode of their culture from seed will, I trust, be acceptable to those who admire the Petunia. About the beginning of March I prepare as much compost as I expect will be wanted for the season, by a mixture of one part decomposed leaf mould, two parts rich peat, and a portion of silver sand. At the same time I cleanse the pots or pans intended for use, that all may be sweetened and fit by the time the seed is to be sown.

"I commence operations by first sifting a little of the soil for sowing the seed upon, and carefully picking out all grubs and worms before using the same. I then put one inch of crocks at the bottom of the pan for drainage, and cover them with a little moss or coarse peat, to prevent the fine earth from running between, and fill up with the above compost, gently pressing it down with the hand till a smooth surface is obtained, when I sprinkle on the seed, distributing it as regularly as possible, and place the pan in a pit or frame where the heat ranges from 60° to 65°, with a sweet and humid atmosphere. In ten days or a fortnight the young plants will

make their appearance, when care must be taken to preserve them from slugs, wood-lice, &c., or the whole pan of plants may be devoured in one night. Give plenty of air; and, in order to keep them strong and stocky, raise the pans close up to the glass.

"As soon as the plants begin to get crowded, I prepare more pans, filled after the manner described above; prick out all the largest, and return them to the same pit or frame, taking care to shade and give air as often as necessary, till the plants have made fresh fibre. In a short time they will be fit to plant separately into 3-inch pots; they may then be removed to a cold frame, and a full supply of air must be given. As soon as they come into flower, select the best: those that are most circular, smooth on the edge, with the outline free from indentation, a stout corolla, and in color the greatest novelty combined with quality."—M.

BRUGMANSIA SUAVEOLENS.—Parties having large conservatories or entrance halls to decorate in the autumn, will find this one of the most useful plants, treated as under. If commencing with a young plant, it must be grown on as much as possible the first year, keeping it to one stem; and if anything like justice has been done, it will attain a considerable height, so that the next season's routine may be taken as the annual one. In March or April cut this back to (say) five or six feet, according to the height required, allowing from three to four for the growth of the young shoots before branching out. Shake it out, and repot it in a proportionate sized pot, giving it nothing but well-decayed melon ground dung, in lumps, and a little sand; if convenient to the parties, give a little bottom heat, that by having a stock it gives earlier bloom; but this is by no means necessary to success; when it begins to break all the shoots but one must be rubbed off: in this and the dung, I consider, lies the secret. For three months I have seen from twenty to eighty blooms out every morning on this young shoot, filling the air with perfume. The older the plant the more certain the success as to large blooms and rich dark leaves.—J F., *in Florist.*

HORTICULTURAL AND AGRICULTURAL PERIODICALS.—While, with a pardonable partiality, we would commend our own Magazine strongly to our friends, we are not insensible to the merits of others, and herewith append a list of the various Agricultural and Horticultural Periodicals of the day, in order that our readers may make themselves better acquainted with them, if so disposed. Any omission will be gladly supplied.

C. M. SAXTON, BARKER & CO., 25 Park Row, New York, will receive subscriptions for any of them.

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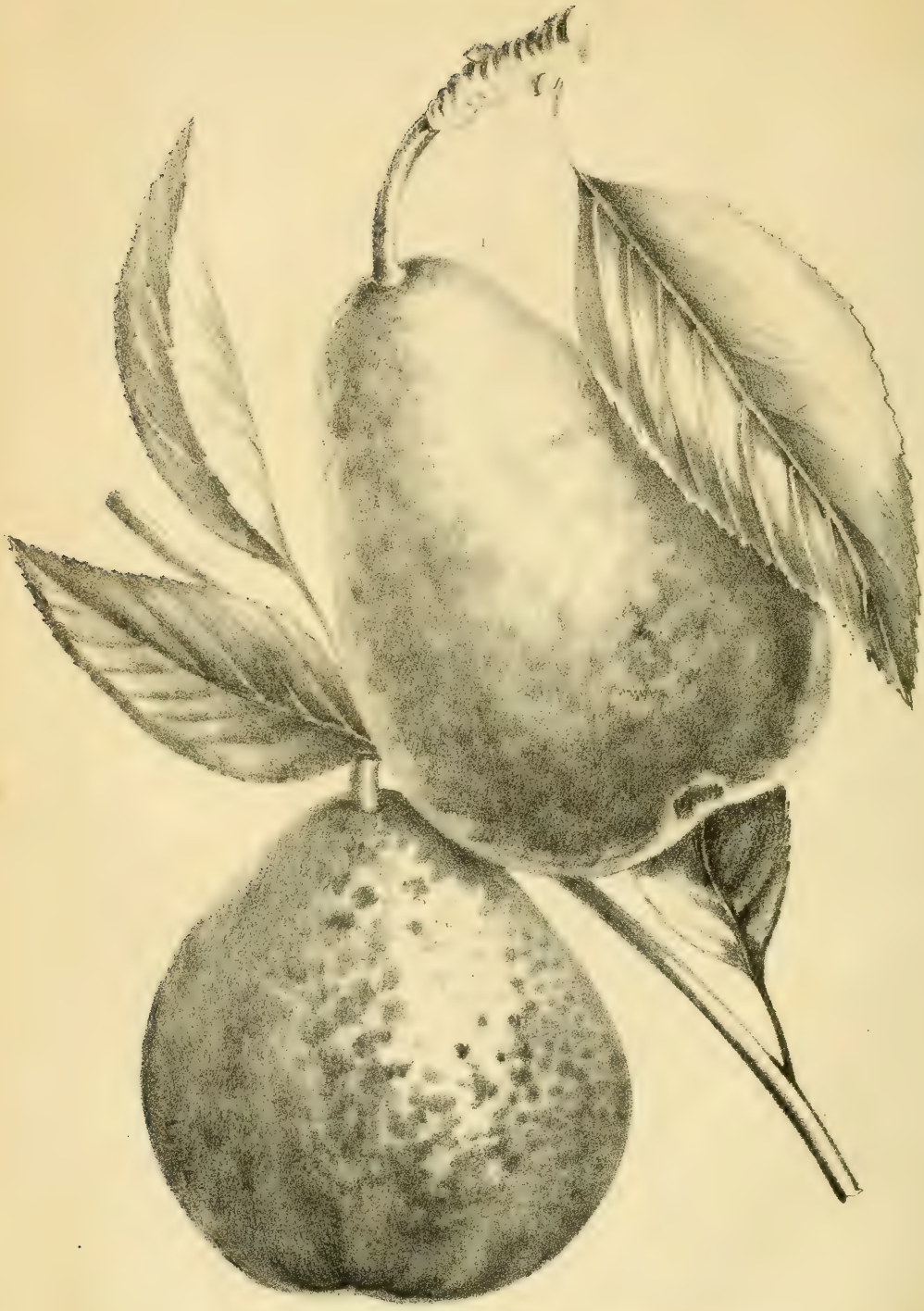
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Dwarf Pears—Deep Planting.



WE purpose giving our readers an occasional article on the culture of Dwarf Pears, a subject of primary interest to the pomologist who grows fruit for the market, and scarcely less so to the consumer. The question as to whether Dwarf Pears can be profitably grown for market has not yet, in the minds of many, and especially of the inexperienced, been satisfactorily settled. While many cases of undoubted success have been adduced affirmatively, the negative side of the question has not been wanting in its examples of failure. Our own opinion on the main question is pretty decided, and will form the subject of an article on a future occasion. We think we shall be better understood by the young pomologist by confining our remarks to one point at a time.

The causes of failure are frequently more difficult to understand than the means of success, and consequently assume a preponderating importance. The causes of failure in the culture of the Dwarf Pear are various, some of them being manifest to the most casual observer, while others are difficult to be understood. We shall confine our remarks on this occasion to one cause alone, which we believe to have been more prolific of failure than any other which can be named. We allude to *deep planting*. We shall probably be told that deep planting—planting up to the junction of the quince and pear—is recommended by the best writers in the country. We admit that this is so ; the recommendation proceeds from gentlemen whom we gladly recognize as giants in pomology ; and yet our own experience and a pretty extended observation, convince us that such a recommendation, unqualified as it is, is not good sound doctrine in pear culture. Is deep planting ever recommended in the case of any other tree or plant than the Dwarf Pear ? Do we not rather do just the contrary ? A leading principle in terraculture, recognized and practised by intelligent practical men, and by none more readily than those who recommend deep planting for the Dwarf Pear, is to keep the roots near the surface, and the surface well stirred. The principle is sound both in theory and practice, and is inconsistent with deep planting : its importance is greatly enhanced when trees are set in either a shallow or a heavy, undrained soil. Plants take up no unimportant portion of their food from the atmosphere through their roots, and they do this most readily when the roots are near the surface ; and they are then also in the best position to be benefited by the annual top dressings which are indispensable to the successful culture of the Dwarf Pear. If we mistakenly plant too deep, nature will at once begin to rectify the mistake by throwing out a series of roots nearer the surface ; sometimes, under favorable circumstances, with no untoward results, but very often, and especially in plants constitutionally weakened by artificial culture, the process exhausts the vital energies of the plant, and it lingers for a while, and then dies. Deep planting has no analogy in Nature, and experience has not taught us that she has made an exception in favor of the Dwarf Pear.

We design this article mainly for the novice, and wish to make it short and practical; we shall probably best do this by giving a brief chapter from our own experience, which has been abundantly confirmed by a multitude of similar cases which have come under our own eye. When, many years ago, we first planted Dwarf Pears, we got trees from two leading nurserymen, and put some in pots and some in the ground. The ground was thoroughly prepared for all alike. Some of the trees were worked high, some low. We were told to plant up to the junction of the quince and pear; this advice seemed well enough in regard to those trees that were worked low, but in reference to those that were worked from fifteen to twenty inches high, seemed so repugnant to what we deemed good practice, that even our respect for the authority of those who recommended it could not induce us to plant all our trees in that way. Some were planted up to the junction, and some at the depth at which they stood in the nursery rows. The soil was a light loam, and consequently more favorable to deep planting than a heavy one. Now mark the result. Those that were worked low, and those that were planted as they stood in the nursery, did well, and have borne good crops of fruit for upward of fifteen years; the first, however, after a while threw out roots from the Pear, and made the largest and most vigorous trees. Those that were worked high and planted deep mostly made a feeble growth, and some of them finally died. At the end of two years those that remained alive were but little larger than when planted, and were so manifestly diseased that we took them up. We found that new but feeble roots had been emitted from the upper portion of the quince stock covered by soil, but the lower part had decayed, roots and all, and presented a charred appearance very much like the Pear blight. The diseased part in some cases extended so far up the stock as to make it manifest that the death of the tree could not be very remote. Where there seemed to be any hope of saving them, the decayed part was cut away, and the trees replanted. Some of them afterward made good specimens, and others died. We subsequently made experiments in deep planting with precisely the same results; and we have seen and examined so many cases of the same kind in the grounds of our friends, that not a doubt lingers in our mind as to the impropriety of the practice.

The mistake made by those who recommend deep planting, consists in not regarding the manner in which different nurserymen work their trees; on some of the latter must rest the responsibility of many of the failures in the cultivation of Dwarf Pears. We know that it requires more time and care to work trees low; but an additional charge can be made for this. It is nothing to the purpose to say that the purchaser will not pay such additional charge; for besides the consideration that the purchaser will naturally consult his best interests, the nurseryman has this matter entirely under his own control.

It will be seen, then, from what we have said, that the true theory in planting Dwarf Pears is, to set them up to the point of junction *when the trees are worked low*, but otherwise to plant them as they stood in the nursery. You may, by pursuing a different course, sometimes succeed, but it will only be under peculiarly favorable conditions of soil and great vigor in the trees. Success, however, we feel assured, will be more certain under all circumstances by regarding the conditions we have laid down. And we appeal to nurserymen to bud their Dwarf Pears as near as possible to the

ground, no matter at what additional cost ; for we cannot help feeling that on them will depend, in a great measure, the final solution of the long vexed question, whether Dwarf Pears can be profitably grown. If the trees be properly prepared in the nursery, we entertain little doubt of the result.

PROPAGATION OF PLANTS BY CUTTINGS.

BY W. S.

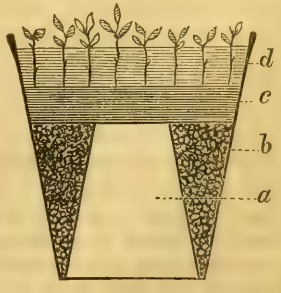
(Continued from page 23.)

Planting the Cuttings.—It is of the greatest importance that the soil in which the cuttings are inserted should be of such a condition, that while it admits of a free passage of water, an equable and constant degree of moisture will still be maintained. It will often have been observed that in a pot full of cuttings those that are nearest the side of the pot will root soonest. This has been referred to the circumstance that the cuttings so placed are more directly influenced by air, which hastens the rooting process ; no doubt there is less retained water at the sides than in the centre of a pot of earth, and in consequence more air. The absorbent material of the pot prevents saturation, the cuttings are there surrounded by a constant degree of moisture suited to their wants, and are less likely to be influenced by the result of unskilful waterings and deficient drainage. When the pots are thoroughly drained and prepared, and under proper management, the cuttings will root with equal facility over the whole surface.

That the greatest necessity exists for a certain and equable amount of moisture in the soil, is further exemplified by the fact that all cuttings succeed best when planted in pure sand. In it we have a uniform material through which water will percolate freely and rapidly, a constant moisture can be maintained without saturation, provided that the drainage is sufficiently secure to allow free escape to superfluous water.

We have, therefore, the reason of the practice generally followed by florists in the propagation of roses and other plants ; shallow boxes are prepared by placing a layer of sand two or three inches in depth, over a layer of material for drainage, such as broken charcoal, bricks, or potsherds, the bottom of the box being perforated for the ready egress of water. Delicate or rare cuttings are generally set in pots, and I have always succeeded, even with plants proverbially difficult to propagate, when planted in a pot prepared as shown by the following figure.

A small pot (*a*) is inverted inside of a larger one, and the space between the two filled with drainage, (*b*); over the drainage is placed a layer of soil, (*c*), and this is covered by a layer of sand, (*d*). This arrangement secures a perfect drainage, the chamber formed by the inverted pot places all the cuttings in equal condition with regard to their contiguity to air, and when the pot is inserted into a hotbed, or otherwise supplied with *bottom* heat, the heated air pervades the chamber, and has a salutary influence upon the base of the cuttings.



In arranging these ingredients it is important to press them firmly, and after thoroughly wetting the sand the slips may be inserted in holes formed with a pointed stick, sufficiently large to avoid abrasion of the cutting when planting. When the pot is filled a sprinkling of water will settle the sand closely round the whole.

Management of Cuttings.—The great stimulants of vegetable life are heat, air, light, and moisture, and in the management of cuttings these agents must be regulated with care and precision ; the kind and degree of care will vary according to the nature, age, and condition of the cuttings under consideration. Every one who has had experience in this mode of propagation is aware that, under certain conditions, cuttings will grow and put forth leaves without forming roots ; while, under different circumstances, the same kind of cuttings will produce roots without indicating the slightest symptoms of growth by the buds. Heat is the active stimulant of the vital forces of plants, and when the atmosphere by which they are surrounded is of a comparatively higher temperature than the soil in which they are inserted, the branches are excited before the roots. On the other hand, when the soil is warmer than the air, the root-forming process will be active, although the branches show no indication of growth. Of course neither of these conditions can long continue, for without a reciprocal action the plant will speedily die ; the effects of these conditions are frequently illustrated in our pleasure grounds and orchards with spring-planted trees. Toward the latter part of spring and the early portion of summer, the air is many degrees warmer than the soil. The atmospheric heat excites the buds, and leaves are developed, but the recently disturbed roots in the colder soil have not yet been excited, and are not in a state to supply the demands of the foliage. The juices of the tree are soon exhausted, and the promised healthy growth is suddenly and hopelessly checked.

The main point of consideration, therefore, in the growth of cuttings, is to stimulate into activity the processes carried on in the vessels beneath the soil, while the upward growth is retarded. This is secured by heating the soil. Heating the air will stimulate the buds and injure the cutting. The cuttings should be kept in an atmospherical temperature as low as the nature of the plant will allow, and by applying heat to the soil, to raise its temperature as high as the roots of the plants will endure. The more completely these conditions are maintained, the greater certainty there is of success, and with ordinary care in the future management, failures cannot occur.

(*To be continued.*)

A HOME IN THE COUNTRY.—No. I.

BY M., SOUTH ORANGE, N. J.

What a pleasant subject! How many associations cluster around "a home in the country." *Is* there such a thing as a home in the city? Doubtless ; but it is a very different and much less lovable thing than the other. The city home is nothing but a house, commonly squeezed in and flattened out between two others, and often dark and dismal ; extending only up toward the sky, and down into the depths of the earth, making life a con-

tinual getting up and down stairs. Of the country home, the house, more cheerful and convenient in itself, is yet but a small part. The dear old trees, the oft-visited spring of unequalled water, or the familiar brook, the barn, the garden, the orchard, the woods, the birds and flowers ; all these, and many more, are a part of a home in the country—things that take hold of the affections as no mere house, be it small or large, can do.

But it is not my purpose now to dwell upon the delights of a home in the country, or to enlarge upon its advantages, even to the business man, most of whose time must be spent in the city ; though I could give arguments in its favor as plenty as white daises, and as invincible too, every one being (the arguments, not the daisies, mind you !), like each new grape or strawberry advertised by the nurserymen, better than all the rest. What I shall attempt to do, is to make some suggestions in regard to making, and, incidentally, taking care of such a home. A most extensive subject, which may well (as it does) fill ponderous volumes ; so I may not aim at anything like completeness, but only to touch here and there a point briefly, yet practically, I hope.

First, then, as to the amount of land needed. This, of course, depends on circumstances ; one acre may be made into a beautiful home, or any number of acres may be used if one has the means and inclination. A common mistake is in getting too much, however. A small place in high condition, thoroughly well taken care of, so that everything thrives, will give much more satisfaction than a large place *half done*. There is another consideration which I am bound to present here, and I do it with a sigh at the thought that in this world things desirable (including wives) are so generally expensive. My consideration is, that country places cost *money*—money to make them, and money to take care of them. It is well, therefore, not to go on too large a scale. One to three acres in ornamental grounds ; the same for a garden and fruit ; three or four acres in pasture, if convenient, and as many as you please in natural forest, would just meet my idea of the desirable quantity. Even of these, the pasture and forest may be dispensed with, and the ornamental grounds much reduced, and still enough remain for a very satisfactory place, especially for one in active business. The retired gentleman of fortune may wisely go on a much larger scale, if his tastes lead him in that direction, adding a farm of good proportions ; but to one whose time must be chiefly occupied with other matters, farming will prove an expensive amusement, and generally a source of trouble rather than satisfaction.

The location should be a dry one. It will not do to depend upon drainage, because one can drain only his own land, whereas he must breathe the atmosphere which comes from lands all about him. A spot open to the southerly, and sheltered from the northerly winds is best, and a pleasant near prospect is of more importance than an extensive one. The eye wearies of the latter, from its vagueness and sameness ; the former changes with every season. As to quality of land, one must take what one can get, but it is a moderate calculation, that land which is "in good heart," which has been generously manured and well "kept up," is worth one hundred dollars per acre more than that which has been "skinned" by being robbed of its produce without compensation. The latter will cost at least the sum named to get it into good condition, unless there be time to wait many years to accomplish it by less expensive means. This is a point not often considered in selecting a site, though it should be, for besides money, *time* is necessary

to bring worn-out land into good condition. Woodland, on which hard wood trees of good size are growing, is always strong land, and probably the party who wishes to sell it to you, will call your attention to the fact that the wood on it will bring a considerable amount "standing." This is undoubtedly true, but it may be quite as true (though he may forget to mention the fact) that it will cost you a larger amount to get the stumps out, and the land into tillable condition, after the wood is cut off. If there happen to be a natural forest on those grounds which you wish to use as ornamental, and if this forest happen to have been well thinned out in "the days of its youth," so that the trees have had room to develop themselves, this is almost invaluable, for you have already to your hand a very important thing which money will not procure, except with the tardy help of old Time. It used to be a saying of our grandfathers, who didn't understand some things as well as we do, that "he who plants pears, plants for his heirs." With more truth may it be said, that he who undertakes landscape gardening on ground which has not already large trees, gardens for a future generation. We know now how to get pears of our own raising in two or three years; but Dame Nature, who generally takes longest time to produce her noblest works, will not furnish us stately hickories or majestic oaks, coax and stimulate her as we will, in less than many years. Good trees, then, which stand not so closely together but that they have had opportunity to branch out near the ground, are invaluable upon a site for a country seat. Common wood lots, however, without a branch within thirty, forty, fifty feet of the ground, looking like a collection of mammoth brooms turned wrong end up, are good for nothing for our purposes, excepting to remain precisely as they are. Such trees have ceased to be individuals, and are only members of a community, and of a working community at that, whose chief business is to furnish lumber and fire-wood. Nothing can be done with them on a small lawn. As a back-ground to the house, such a wood will serve an excellent purpose, with the aid of some planting. Moreover, a tract of such wild woods to roam in, and gather wild flowers in spring, and nuts in autumn—to afford sheltered ground for exercise in winter, forms one of the most enjoyable features of a place. It will not do to make a lawn of, though.

An inclination to the south or south-east is an advantage for most purposes of cultivation; an inclination to the north or north-west, a disadvantage. A gentle undulation of surface, and a graceful ravine, especially if it be the pathway of a bubbling brook, are features for which, if on the ground which you intend to make your lawn, you can afford to pay liberally. The most desirable soil is a sandy loam. Clay soils are strong, but not easily or pleasantly worked. Sandy soils will give you good peaches and pine trees, and not much else, and are, moreover, great spendthrifts of the manure you bestow upon them.

What the house should be I shall not pretend to discuss, for this is a large subject in itself. One point may be noted, however. After you have made a liberal calculation of the largest amount you think it can possibly cost to build such a house as you have planned, add fifty per cent., and you will probably get at something like the real cost.

The house stands, of course, in the ornamental grounds, having the lawn, generally, more or less in front. The kitchen garden takes its appropriate place in the rear. I by no means hold that it should be entirely concealed from the house, especially in places of moderate pretensions. On the

contrary, its presence should be at least clearly indicated, and if neatly laid out and well kept, as should be the case, it may be, though not obtrusively, yet plainly in view. A good kitchen garden, well stocked with fruits and vegetables, is a feature so essential to the comfort and enjoyment of a country home, that its existence should be at least clearly manifest, or the place will appear lacking in substantial comfort.

We come now to the laying out the ornamental or pleasure grounds.

The general styles in which this may be done are two, the *artificial* and the *natural*, the latter being again subdivided into two, technically termed the *picturesque* and the *beautiful*. The artificial or geometrical style, which in olden times was adopted in nearly all pleasure grounds, abounds in straight lines, and mathematical angles and curves. Everything must be uniform and exact—regulated by line and compass ; and your place continually reminds you of your almost forgotten lessons in geometry. Part must answer to part ; every tree, shrub, fountain, statue, seat, must be one of a pair of twins.

"Grove nods at grove, each alley has a brother,
And half the platform just reflects the other."

In the progress of good taste, this style has in great measure given way to the natural style, though it is not without its merits, and is generally preferable for quite a small place on level land, as being more practicable on a small scale, and more economical in the use of land.

Of the natural styles, the picturesque is abrupt and striking, dealing in bold hills and deep ravines ; ragged rocks and rushing torrents. It is hardly suited to places which have not naturally some of these features ; if not within themselves, yet prominently in the surrounding landscape. The beautiful style deals in graceful, flowing lines and easy gradations. It avoids startling contrasts, and loves quiet and peace. Silvery lakes, murmuring brooks, velvet lawns, and graceful trees and shrubs, are elements of its beauty. Either of the natural styles may partake of the features of the other, or the two may be in some measure merged together. The geometrical or artificial style, on the other hand, is at open war with the picturesque, and seems to wish to put even the beautiful into a strait-jacket. The natural and artificial styles cannot, therefore, be harmoniously united.

The one follows nature, looks up to her as a model and teacher, and strives to understand and imitate her beauties ; the other sets itself up as above nature, and attempts to recast her works in a mould of its own. Order, uniformity, symmetry, exactness, are the watchwords in the artificial style ; *variety in unity* is the aim of the natural. The beautiful is the one now most in vogue, and is also that which is adapted to the greatest number of places. The little I shall have to say about fitting up the ornamental grounds will, therefore, have reference chiefly to this style, and this little had better be deferred to another number.

FRUIT TREES IN ORCHARD HOUSES.

BY W. S.

Fruit trees of all kinds flourish so luxuriantly in the open air in America, that it would, at first sight, seem perfectly unnecessary to provide them with glazed roofs, and nurse them up in pots ; but when we recollect

that the curculio destroys most of our plums and nectarines, that both them and the peach are prone to a luxuriance incompatible with the highest degree of fruitfulness, that mildew in various forms continually insinuates itself and makes sad havoc with our calculations ; not to more than mention grubs and borers, late spring and early autumn frosts, the cutting, blighting winds of spring and wilting droughts of summer, quite a formidable array of calamities can be enumerated, without infringing upon truth, as every grower of these fruits has but too good reason to know.

In the orchard house, all these conflicting opponents to success may be avoided ; the curculio is too cunning to be caught under roof, and the borers will seldom be found under glass if the trees are free of them when introduced ; the atmosphere is so completely under control that mildew and all other maladies consequent upon sudden and extreme changes may be prevented.

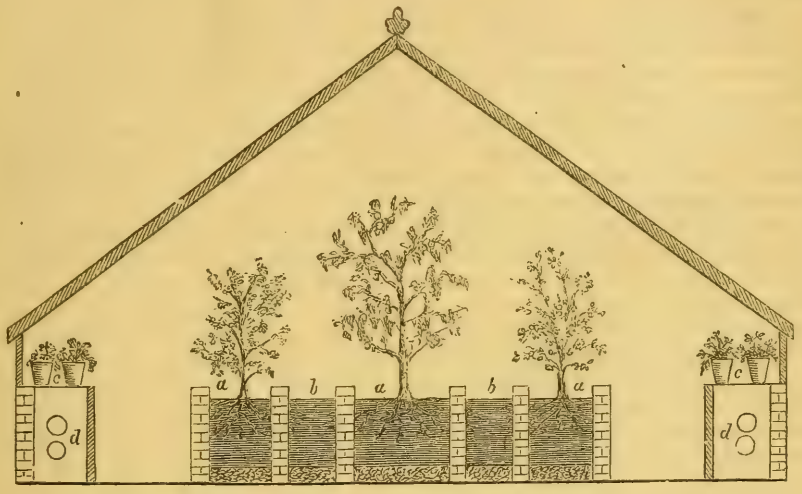
Many of these advantages, however, are only incidental. Earliness of bearing and continued productiveness are the essential characteristics ; the certainty of the crop, as well as the ready means of accelerating the ripening, are also subjects worthy of note.

In all fruit-bearing trees a certain maturity has to be attained before fruit is produced ; and the period when this takes place depends much on local circumstances. "Whatever produces excessive vigor in plants is favorable to the production of leaf buds, and unfavorable to the formation of flower buds ; while, on the other hand, such circumstances as tend to diminish luxuriance, and to check rapid vegetation, without affecting the health of the individual, are more favorable to the production of flower buds than of leaf buds." When a tree is planted in a deep, rich soil, in a climate congenial to its growth, the fruiting period will be the longest deferred ; from the encouragement to the extension of roots, branches will be produced with a barren luxuriance for many years. Whereas, a tree set in poor ground will make feeble growths, but will blossom and fruit at an early period, although such fruiting may be the means of seriously weakening it ; some trees will thus fruit themselves to death. This is a well-known law, and has been acted upon by various expedients, such as root pruning, bending down branches, ringing, etc. The most popular, because most available, method of inducing fruitfulness at present, is that of modifying excessive vigor by grafting, or otherwise introducing those of robust growth on stocks of weaker habit, familiarly known as the "dwarfing system." This practice is followed with more or less success, according as experience discovers the peculiarities of growth and constitutional vigor of individual trees.

It is very obvious that the limited amount of soil in a pot will speedily be interwoven with roots ; growth will then be checked and fruit buds formed ; it is equally apparent that these conditions must limit the quantity of fruit that can be matured. Here the orchard house system becomes valuable ; the pots being set on a border of soil early in their growth, young roots find access into it through openings left for that purpose, and thus the plant is provided with an extra supply of nourishment during the period of formation and ripening of the crop ; the roots thus produced being removed when the crop is perfected, all tendency to redundant wood-growth is checked, and the branches are again thickly studded with fruit buds.

The greatest objection to this course of culture is its expense, involving,

as it does, much care and time, in watering and other necessary attentions, neglect of which will inevitably be followed by failures. These objections might be partly obviated by setting out the plants in permanent borders; and to guard against over luxuriance in the first stages of growth, and deficiency of nourishment in the future, let spaces be left between the plants for root pruning and additions of fresh soil, as either of these operations is demanded. The following figure shows the section of an orchard house arranged according to the above suggestion.



SECTION OF AN ORCHARD HOUSE.

The trees are planted in the spaces *a a a*. The spaces *b b* to be filled with soil during summer, removed altogether after the crop is gathered, or turned over so as to disturb the roots sufficient to check growth. The walls each side of these spaces to be built pigeon-hole fashion, so that a communication may be provided for the roots. The shelves *c c* will be useful for strawberries in pots, or other similar purposes. The heating apparatus, if any is required, is placed at *d*.

This arrangement secures all the advantages of a system of pot culture, and would be equally productive and easier of management. The larger body of soil would retain moisture for a longer period, and daily visitations of the watering pot would not be required.

INFLUENCE OF LIGHT ON PLANTS.

Plants and their leaves, if excluded from light, become of a white or pale yellow color, in which state they are said to be *blanched* or *etiolated*. This is occasioned by their being neither able to decompose the water they imbibe, nor to inhale carbonic acid. In the dark, plants can only inhale oxygen, and thus deprived of free hydrogen and carbon, on the due

assimilation of which by the leaves all vegetable colors depend, and saturated with oxygen, they of necessity become white. An excess of oxygen has uniformly a tendency to whiten vegetable matters ; and to impart that excess to them is the principle upon which all bleaching is conducted. An over-dose of oxygen causes in them a deficiency of alkaline, or an excess of acid matter, and light enables plants to decompose the acid matter, and to restore that predominance of alkalinity on which their green color depends. Sennebier and Davy found most carbonic acid in blanched leaves ; and all green leaves contain more alkaline matter than the rest of the plant which bears them. Every cook knows that a little alkali, carbonate of soda, added to the water, improves the green hue of her boiled vegetables. That this is the cause of the phenomenon is testified by direct experiment. Blanched Celery and Endive, and the white inner leaves of the Cos Lettuce, contain about one-third more water than the same parts when green ; and if submitted to destructive distillation, do not yield more than half so much carbon. Then, again, if a plant of Celery is made to vegetate in the dark, under a receiver containing atmospheric air, with the addition of not more than one-twenty-fifth part of its bulk of a mixture of carburetted hydrogen, and hydrogen such as is afforded by the distillation of coal, that plant, though it becomes paler than when grown in the daylight, still retains a verdant color.

So effectual is the metamorphosis of plants effected by excluding them from the light, that Professor Robinson brought up from a coal mine, near Glasgow, some whitish-looking plants of which no one could detect the name or character. After exposure to the light the white leaves decayed and were succeeded by green ones, which speedily revealed that the plants were Tansy. They had found their way into the mine in some sods from a neighboring garden ; but though they had retained life in its dark galleries, they had entirely lost their natural color, odor, combustibility. This is only in accordance with the gardener's yearly experience ; for this blanched Sea-kale, Endive, and Lettuce are totally dissimilar in flavor and appearance to the plant left in its natural state.

Sir H. Davy excluded a Cos Lettuce from the light. In six days it was rendered very pale, and at the end of another week it was quite white ; the growth of the plant was checked, and the analysis of its leaves showed that they contained more carbonic acid and water, but less hydrogen and residual carbon, than an equal weight of green leaves.

A Potato has been observed to grow up in quest of light from the bottom of a well twelve feet deep ; and in a dark cellar a shoot of twenty feet in length has been met with, the extremity of which had reached and rested at an open window. In the leaves of blanched vegetables peculiar chemical compounds are formed. Thus in the blanched shoot of the Potato a poisonous substance called *solanin* is produced, which disappears again when the shoot is exposed to the light and becomes green (*Otto*). In Asparagus, in blanched Clover (Piria), and other plants grown in the dark, *asparagin* is formed, and no doubt other peculiar changes take place, which are not yet understood.—(*Johnston's Lectures on Agricultural Chemistry.*)

It deserves notice, that it has been proved by the experiments of Dr. Hope and others, that light from artificial sources may be concentrated so as to enable plants to absorb oxygen and perfect those elaborations on which their green color depends ; and the light of the moon has a similar influence. A

similar concentrated light will make the Pimpernel, and other flowers which close until sunrise, open their petals and rouse from their rest ; a fact which gives another reason why plants in rooms frequented at night become weak and exhausted sooner than those that remain, as Nature dictates, unexcited at night.

The yellow, red, and light brown tints which render the foliage of our plants so beautiful in autumn arise from the absorption of an excess of oxygen gas. When the reduced temperature of the season deprives a leaf of the power to elaborate the sap, and, indeed, stops the circulation to it of that fluid, the absorbent powers of the organ are reversed, and, instead of carbonic acid, it inhales oxygen. The effect is speedily perceptible. Gallic acid forms, and this, modified by the various saline constituents of different leaves, changes the hue of their green coloring matter, called chlorophyl or chromule, into various tints of yellow, red, and brown. This is the general effect of acids acting upon vegetable greens, and that it is the cause of the autumnal change of color in leaves is proved by the fact, that if a green leaf be dipped into an acid it assumes the same hue ; and if some red or yellow leaves be dipped into an alkaline solution they are rendered green, the alkali evidently neutralizing the acid that had wrought the unnatural change of color.

Changes similar to those resulting from age may occur merely from accident, as from the puncture of insects, the growth of parasitic fungi, or the blighting influence of frost. First they change to yellow ; then they change to red.

But some leaves present naturally a different color on each surface. The upper surface of the leaf of the Cyclamen is green ; the under surface is red ; yet the red chromule, in this case, exhibits the same chemical properties as the chromule that has been changed to red as the result of age.—(*Macaire.*)

The hints and warnings which these facts suggest to the mind of every reflecting practitioner are numerous. They explain and enforce the necessity of a regular, and by no means, as to quantity, indiscriminate supply of water to plants ; the importance of shading after their transplanting, yet the evidence of unnecessary shading to those established ; and of a free circulation of air, &c. ; and the necessity of keeping the leaves as clean and as free from injury as possible. The leaves of plants must often be removed ; and in some instances this is done with essential benefit ; but the horticulturist should constantly keep in mind that, with every leaf that he removes, he deprives the plant of a primary organ of its existence.

Light, it has just been stated, is the cause of the green color of plants ; but it should be observed that its full power is only beneficial when directed upon their upper surface. This is evidenced by the position they always maintain. Trees, whether nailed to a north or south wall, or trained as espaliers, always turn the upper surfaces of their leaves outward to where there is most light. Plants in a hothouse, uninfluenced by the direction from whence proceeds the first supply of air, or the greatest degree of heat, turn not only their leaves, but their very branches, towards the source of brightest light, and, if not turned almost daily, entirely lose their symmetrical form.

If the branches of a tree trained against a wall, or other support, are so moved when their leaves are completely expanded, that the under side of the foliage is the most exposed to the light, they are always found to regain

their natural position in a day or two. If the experiment be often repeated on the same individual, the leaves to the last continue to revert, but become gradually weaker in the effort, partially decay, and their epidermis peels off. Succulent leaves are particularly sensitive of light, but those of pinnated, luguminous plants—as the Pea and Kidney Bean—are still more so.—J., *in Cottage Gardener.*

DUC D'ORLEANS AND FONDANTE DE SEPTEMBRE PEARS.

BY L. E. BERCKMANS.

(See Frontispiece.)

Duc d'Orleans.—Syn. *Marechal* (or *Conseiller*) *de la Cour.*—This truly distinguished fruit is one of Van Mons' seedlings from the seventh generation. This generation, with the eighth, has been the most successful of all his seedlings.

The tree is vigorous, pyramidal in shape, of a fine erect and symmetrical aspect, of a greyish appearance when leafless. The fruit is medium, oval pyriform, green, waved and spotted with russet, turning yellow when ripe, (about November). Flesh white, buttery, juicy, with a slight aroma, *very good* here, ranked as best in Europe ; and will perhaps come up to its standard value when grown upon more "mature" trees.

It is a pretty generally acknowledged fact among our good pomologists, that we are too rash in giving judgments upon fruits grown upon sickly or too young trees. As the tree improves in maturity, the fruit improves in quality. A rank grower on a sickly tree has not the required substance, the elaborated sap, which gives afterwards to the fruit its full value. All fruits improve not only in quality, but in durability, when the rank growth of the tree is checked. This is evident in peach-trees, and will be better ascertained by future experiments in regard to other fruit trees, destined by nature to have, as the pear and apple-tree, a protracted *adolescence.*

The first name of this fine fruit was either *Conseiller,* or Marechal *de la Cour,* and fruited for the first time in 1841. The label of the original tree was lost, and when Mr. Bivort planted the remainder of Van Mons' collection in his grounds, he could not find the name or the number among the seedlings. Afterwards this tree yielded a fine crop, and as the fruit of the Marechal de la Cour had been little known before, it could not be recognized, and the variety was named by us Duc d'Orleans. Hence the synonym. Had the Marechal been known some ten or fifteen years before, no doubt the fruit, in the absence of all label, would have been identified ; but the variety was of too recent origin, and such mistakes are certainly excusable.

Fondante de Septembre.—One of the gains of Professor Van Mons, to which I cannot affix the exact *data.* The tree is a good grower, does well upon quince and standard, and is very prolific. As we have not too many "good and certain bearers," I thought this fruit was worthy of notice. Although not very large, nor of the very highest quality, it bears, and sticks so well to the tree, and is of such handsome color, that I deem it valuable indeed.

Fruit round, or pyriform, depressed, of medium size. Skin green and red, changing toward maturity to yellow and crimson. Flesh very melting, half buttery, firm, with a decided flavor, and sugar enough. Ripens slowly, and without decaying at the core, from beginning to end of September. In the South it ripens in August, but I have kept specimens from the same tree as long as the 15th of September, having tested the first ones about the 3d of August.

It is uniformly fair in shape and color, and has been a regular bearer with me these last four years, in New Jersey. I found it still better, larger, and more colored in Georgia, where I picked half a dozen fruits from a tree planted in February, the same year, all in perfect condition.

THE PERSIMMON, OR AMERICAN MEDLAR (Diospyros).

BY D. L. ADAIR, HAWESVILLE, KY.

It is something singular that a fruit with as many good qualities to recommend it as the Persimmon has, should have been so much neglected by horticulturists. As an ornamental tree, with its beautiful shape and glossy foliage, its profusion of rich orange fruit, hanging among its autumn-tinted leaves, and in some varieties holding its fruit all winter, it has few superiors. It is perfectly hardy, and will grow in any exposure ; on the bleak barren hill-sides exposed to the stormy winds, or in the lowlands among the marshes and stagnant swamps.

Captain John Smith, of Pocahontas notoriety, describes it among the luxuries he found in Virginia. He says, " We daily feasted with good bread, Virginia pease, pumpions, and *putchamins ;* fish, fowle, and diverse sorts of wild beasts, so fat as we could eat them," &c. He elsewhere describes *putchamins* as a species of indigenous plum, with fruit much like a medlar, first green, then yellow, and red when ripe. " If it be not ripe, it will draw a man's mouth awry with much torment. If ripe, it is as delicious as an apricot." The valiant captain's description of the fruit is a very good one. There is nothing so unpleasant as a green persimmon, and very few fruits so grateful as a ripe one.

The Persimmon sports very much in the quality of its fruit. Some of the trees ripen their fruit in August and September, and are gone before the leaves fall, and others ripen all through October and November ; while we have seen the fruit hang on the tree until the bursting buds of spring pushed it off. Some are flat, depressed at both ends ; others globose and oblong. Some are a light lemon yellow ; others, orange ; while others, again, are red, becoming almost black when thoroughly ripe. Some are so soft and watery that, as they fall from the tree, they are mashed, and the contents run like thick molasses ; while others are so tough that they rebound like an India-rubber ball. Some are never fit to eat, retaining to the last that bitter, astringent quality which makes one pucker up his lips as if to whistle ; while the best of them are perfectly luscious.

The fruit is used in making a most delightful beer, far preferable, in my estimation, to lager beer, or any of the drinks we have under the name of beer. It yields an enormous product of whisky when distilled. It can be



THE PERSIMMON.

dried and put away like raisins ; in fact, some varieties dry themselves upon the tree, when they can be put up in boxes, and kept an indefinite period. The pulp can be separated from the seeds, spread upon earthen dishes, and dried, like peach leather. A sirup can be made from the fruit, superior in flavor to the best molasses.

The wood is very close-grained, heavy, and susceptible of the highest polish, and so hard and smooth, that I doubt not it would answer every purpose of more costly wood in engraving or wood cuts.

[Mr. Adair's suggestions deserve consideration. We remember a couple of instances of the Persimmon being planted strictly as an ornamental tree, and think highly of it for this purpose. We have seen a variety on Long Island which produces a seedless fruit, and bears abundantly. It is large, and very fine when fully ripe.—Ed.]

SEVERAL CHOICE NEW BEDDING PLANTS.

BY JAS. S. NEGLEY, PITTSBURGH, PENN.

Phygelius Capensis.—This beautiful herbaceous plant, introduced some years since from Caffreland, on the Whittenbergen, proves to be an elegant half-hardy bedding plant. It is possible it would survive the winter in a dry border, protected from the extreme cold and wet ; however, it is easily propagated from cuttings of the young growth, which should be made in the autumn to insure early flowering plants. It flourishes best in a light, rich loam, where it will grow to the height of two feet in a season ; the flowers are produced on branching racemes, in great profusion, all summer ; they most resemble a fine scarlet Pentstemon, excepting that they droop curiously towards the stem. The Phygelius capensis may be classed among our most ornamental and picturesque bedding plants, and should not be forgotten by the floral amateur next spring.

Delphinium Formosum.—Our gardens possess few *perfectly* hardy blue-flowering plants ; certainly none that will equal this charming variety of the perennial Larkspur. It cheerfully adapts itself to any rich garden soil, and continues all summer to throw up tall spikes of magnificent light azure blue flowers ; when planted in clumps the effect is grand. To insure an abundance of bloom the plants should not be allowed to produce seed. It only requires an acquaintance with this desirable variety to make it as much of a favorite as the *Dielytra spectabilis*.

Antirrhinum Napoleon III.—As the name indicates, we are indebted to the skill of the French florist for this charming addition to our list of bedding plants. The great beauty of this single variety should be sufficient to bring this too much neglected family into more notice. The wild Antirrhinum that grows upon the old walls of England is attractive, and why should not a striking improvement like Napoleon III., with large spikes of deep velvet-shaded crimson tubes and rich yellow mouths, be planted on every parterre ? The Antirrhinum is of the easiest culture ; grows freely on a dry bank or in any garden soil. It will almost withstand our winters, but may be kept secure in a cold frame free from damp and sunshine in winter. To have a succession of blooms it should not be allowed to seed. Choice named varie-

ties are propagated freely from cuttings, either in summer or winter, under glass.

Salvia Souchet.—Every amateur is acquainted (or should be) with *Salvia splendens*, a rank-growing, weed-like plant, covered in autumn with fiery spikes of crimson flowers. Well, *Salvia Souchet* has the brilliant effect of *Salvia splendens*, but is much more dwarf, of compact habit ,and flowers earlier and has larger spikes. I think it is a decided improvement, and well worthy of general culture.

ACCIDENTAL MONSTROSITY.

The late dry season was singularly free from accidental monstrosities among flowers. We have not met with a single Rose sprouting into a branch from the middle, or producing there even a cluster of leaves. Proliferous Pears and Apples have been sought in vain, and the customary transformations of flowers into leaves, so common in warm damp summers or in variable weather, have almost disappeared. This would seem to show that the disturbing forces which interfere with vegetable organization are connected with sudden atmospheric changes, such as heavy rain following hot dry weather, or with an unsuitable climate, such as long-continued damp warm weather acting upon the natives of cold dry countries. Instances, however, of sudden malformation have even this year been observed which are at present inexplicable, such as the following :

At Newsell's Park, near Royston, a Jasminum grandiflorum has suddenly produced flowers like those represented in the annexed cut. Each corolla



has refused to expand, and has allowed a small green shoot to burst through its side ; these shoots are club-shaped, fleshy, rather longer than the corolla,

and clothed with short, acute, spreading scales, which become closely clustered near the points. Towards the lower part of the shoot the scales are thin, flat, and in irregular tubes, as if the remains of attempts to form a corolla; a little higher up such scales occur as at fig. 1, with a deformed stamen growing from its upper side; but the greater part of the shoot is covered by abortive stamens only, tough, thick, sharp-pointed, as at fig. 2, or having a recurved point, or being of a very small size, as at fig. 3, which represents two of the crowded scales collected round the points. What makes this case more especially interesting is, that the deformity consists in a tendency to produce a very great number of stamens, although the plant and all its relations are particularly distinguished by never having more than two in a natural state. It is also extremely singular, and as far as we know without parallel, that notwithstanding this exuberant display of stamens, there was no trace of any tendency to produce a pistil on the parts that naturally compose that important organ.

The cause of this strange monstrosity is inexplicable: nothing can be more common-place than the treatment the plant had had; it was grown in a mixture of peat and loam, it was kept in a house in which there was only heat enough to keep out frost, and it had never had any manure of any description. Almost every flower upon the plant underwent a similar transformation.

For the present it adds fresh difficulty to a solution of the problem, What causes transformation or malformation in the vegetable kingdom? To say that it demonstrates the tendency of all the parts of a flower to assume the condition of the leaf, which is the type of all organs, is not sufficient; for in the first place we wish to know what gives the tendency, and secondly, in the case before us, the tendency is really confined to the production of stamens.—*London Gardener's Chronicle.*

THE ISABELLA NOT A NATIVE GRAPE.

BY S. B. BUCKLEY.

It is generally supposed by botanists and horticulturists, that the Isabella grape is indigenous in the Carolinas. About the commencement of the present century, Mr. Lespeyre, a Frenchman, on returning to his home at Wilmington, North Carolina, from a visit to Europe—his homeward voyage being by the West Indies—brought some grape roots for cultivation, among which was the Isabella. These he cultivated successfully, and as early as 1809, or 1810, the Isabella grape was sold in the Wilmington market from Lespeyre's garden. Soon after this, Mr. Lespeyre moved into the country, near the residence of a Mr. Gibbs, to whom he gave roots of his grape; and a few years later, Mr. Gibbs gave some to the elder Prince, of Flushing, N. Y., who, supposing they were natives of Carolina, called them Isabella, in compliment to Mrs. Isabella Gibbs.

A Spaniard from Catalonia being on a visit to Lespeyre, on seeing said grape, inquired how it came to be growing there; adding that it was a Catalonian grape.

I was told the above by Dr. James F. McRee, a botanist, and an old resi-

dent of Wilmington. He was well acquainted with Lespeyre, and had eaten of his grapes long before they were known to either Gibbs or Prince.

Judge Ruffin of North Carolina knew Lespeyre, and he also corroborates the fact of the introduction of the Isabella, as related to me by Dr. McRee.

The Isabella was introduced into this country by Lespeyre from either Spain or the West Indies.

It has never been found native in the United States by any botanist.

[On reading the above, we were almost ready to exclaim, "Have we any native grapes at all?" Certain persons have done their best to take from us the Rebecca, Anna, Herbemont, and others; Mr. Prince has given the Delaware bodily to the "foreigners;" and now, at this last moment, Lespeyre rises from the dead to rob us of the Isabella. Truly we have fallen among strange times; soon we shall have nothing left that we can call our own. But let us see. It does not seem from the above that Lespeyre himself claimed to have introduced the Isabella; this claim, as we understand it, was put forth by others after his death, and with the confessed doubt that they did not know whether it was from Spain or the West Indies, and we think it may fairly be doubted whether it was from either. If either of the gentlemen above-named ever heard Lespeyre say that he introduced the Isabella, they probably at the same time heard him say whence he brought it; and precisely on this point we should like to hear them speak: their position would give weight to anything they might say of their own knowledge. It might then become necessary to go a step back of this; but at present we see no occasion for it. The remark of the Catalonian is entitled to but little consideration in the present aspect of the case. We have no evidence that he was capable of discriminating on the subject at all; a similar remark might be made by anybody, but would be of no force of itself.

On the other hand, we have testimony of a much more positive character. If the catalogues and gardens of Europe be searched during the beginning of the present century, and for some time after, no grape at all answering to the Isabella will be found; and even if one were discovered, or the fact were admitted for the sake of argument, it could be promptly met by the supposition that the vines or seeds were carried to Europe by some of the early Spanish adventurers; nothing, therefore, would be gained by such an admission, if made. It was considerably later before the Isabella and Catawba were introduced into Europe, and they were at once assigned their proper place, and characterized as "foxy;" a term of considerable significance in this connection. The Isabella, in fact, has unmistakable internal evidence of its native origin. Aside from the peculiarities of its foliage, wood, &c., it has a peculiar and characteristic flavor which impels us at once to assign its parentage to *Vitis labrusca*. This peculiar flavor is common to no foreign grape whatever; and may be regarded as positive evidence of the origin of any grape possessing it, no matter how faintly. Moreover, there is a marked characteristic in the pulp and skin of the native grape which to our mind is decisive of the whole question; and we should unhesitatingly pronounce a seedling to be of native or foreign parentage from an inspection of the berry alone. As bearing on the subject in hand, we may mention the fact, that seedlings have been raised from *Vitis labrusca* which have been almost reproductions of the Isabella. Taking all these things into consideration, and others which might be mentioned, we think the Isabella may still be retained on the list of native grapes.—Ed.]

FUCHSIAS FROM SEED.

The majority of Fuchsias ripen seed freely; but, unless they are hybridized, it is almost waste of time to sow it, for the flowers so produced are seldom equal to the parent plant. The operation of fertilizing is easily performed on the Fuchsia, the pistil being prominent, and the pollen plentiful. In selecting plants for hybridizing, it is necessary to bear in mind that those bearing the seed will communicate their habit to the seedlings, although the plants from which the pollen is taken may be of indifferent habits, provided the flowers have good properties. Having selected the flowers intended to be fertilized, cut out their stamens as soon as they open, and, when they are fully expanded, apply the pollen from those flowers the properties of which you wish to impart; tie something round them to distinguish them from the others, and, when they are ripe, the seeds may be separated from the pulp by washing them out in clear water; the good seed will sink to the bottom.

The seed may be sown in spring, in a pot of light soil, and placed in a greenhouse; they do not require much heat to vegetate them; at least I have found them come up quite as well, if not better, without it, and the plants so produced are much stronger than those raised in a higher temperature. As soon as they are of size to handle nicely, pot them singly in small pots, and place them in a light, airy situation: if they are grown in a close atmosphere, it tends to draw them out weak and lanky, so that the true habit of the plant is not seen. Shift them into larger pots when necessary; a 4 or 6-inch pot will be large enough, as large shifts only tend to keep them growing, and retard their flowering: they should never be topped or pruned until they flower. The principal object is to mature their growth quickly, so that the flowers may be seen as soon as possible. Many of them will bloom the same season. After they have done growing, and the foliage drops off, they should be sparingly watered, and be kept almost dry all winter. The following spring, water them freely, and, when they show signs of growth, place them where they will have plenty of air and light, but do not shift them until they flower, for reasons before mentioned. I prefer flowering seedlings out of doors, after all danger of frost is past, as I have invariably found that the colors come brighter and more distinct than when kept in the house. It is desirable, however, to choose a situation where they will be somewhat shaded from the sun in the hottest part of the day.

The Fuchsia is not very particular as to soil; any good garden mold will suit the plants well enough, provided it is of a free, porous texture, and the pots well drained. Many of the strong growing sorts are frequently destroyed by being put into large pots in a rich soil. This is often the reason why serratifolia, fulgens, corymbiflora, and some other sorts are shy in flowering. I once potted two plants of serratifolia, the one in rich turfy loam and dung, the other in a poor worn-out soil, mixed with a few pieces of broken bricks; the consequence was, that the former grew most luxuriantly, and showed no flowers at all till late in the fall, whereas the other made a very short growth, and flowered profusely the greater part of the season. The less robust varieties do better when planted in good loam, with about a third part of well-decomposed manure.—W. S., *in the Florist.*

STOEVER RASPBERRY.

BY W. D. BRINCKLE, M. D.,

Formerly of Philadelphia, now of Groveville, New Jersey.

SEVERAL branches of the Stoever Raspberry were sent to me on the 23d of September, 1859, by Mr. Henry A. Dreer, of Philadelphia. These branches, when received, contained green and ripe fruit in all their various stages of development.



The berry is very large, $\frac{2}{3}\frac{5}{2}$ of an inch long by $1\frac{1}{8}$ inch wide; roundish conical in form; of a rich crimson color; and of good flavor.

This fine large raspberry was discovered growing wild, in August, 1858, near Lake Dunmore, in Vermont, by Mr. Jefferson F. Stoever, and removed to his garden at Taconey, near Philadelphia, in the fall of the same year, where it fruited in 1859. Being a native of the northern part of the United States, it will probably be better adapted to the exigencies of our climate than most of the large varieties.

A CHEAP GLASS STRUCTURE.

BY A. C. HUBBARD, DETROIT.

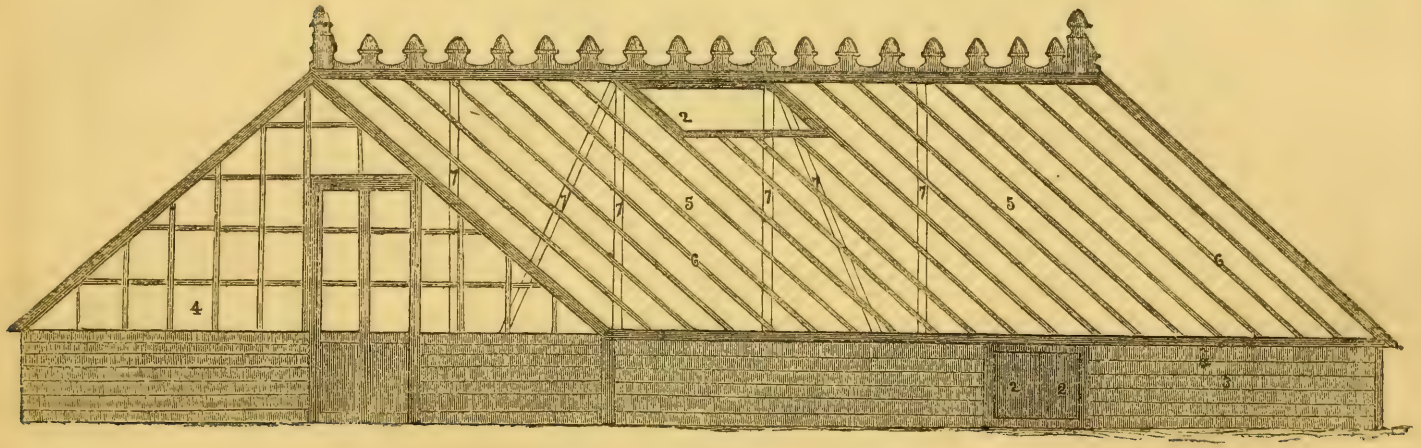
I SEND you a plan of a small cold grapery, built about a year since, which I think combines neatness and cheapness. It need not cost, all finished, over $120. I cannot tell precisely what this cost, as I planned it and built it myself, as I had leisure and fancy, in the winter season. The cost of all the material, however, did not exceed $65, exclusive of border. The border is trenched two and a half feet deep under the building, and twelve feet each side, and five feet across the ends, using old hotbed manure, sods from the road-side, and old tan that had lain for five years. The building stands upon three tiers of cedar posts, levelled with the surface, and the sills spiked firm on to the outer posts; the timbers used are 2 by 4 scantling entire, except the plates, which are 2 by 6, projecting over two inches, and a strip of board three inches wide fitted on the edge to receive the glass and carry off the drip.

1. Door on each end.
2. Ventilators each side and on each side of roof.
3. Clap-boarded.
4. Glazed 12 by 14 glass, both ends glazed.
5. " 10 by 14 " " sides "
6. 2 by 4 scantling, rabbeted to receive the glass.
7. Supports and beams in the centre.



END SECTION.

[There are some good points in the above; but Mr. Hubbard fails to tells us the *size* of his house, and we are therefore without the means of judging of its cheapness compared with structures of a similar kind. Enough is



A CHEAP GLASS STRUCTURE.

given, however, to convince us that the plan is both simple and cheap. We should *kyanize* the cedar posts ; in fact, all the wood-work of glass structures should be submitted to this process ; it would make them almost as durable as iron.—Ed.]

HORTICULTURE IN DELAWARE.

BY DR. GEORGE PEPPER NORRIS, WILMINGTON, DELAWARE.

As it is desirable to compare notes as to the success of various fruits in different parts of our great country, I send you a few lines about fruit in New Castle Co., Delaware. Pears and grapes are all the rage ; apples are mostly ignored ; plums, apricots, and nectarines are not attempted on account of the curculio. The peach is not grown in this immediate vicinity, but sixteen miles below Wilmington, in the lower part of the county, and in the two lower counties, much attention is paid to peach-orchards, and very handsome profits realized therefrom. More of this anon. Now first as to the grape, to take them in alphabetical order, and premising that I do not speak altogether from my own personal experience, but in part from my neighbors.

Blanch is well thought of ; is said to keep admirably for winter, and is to be recommended in this vicinity.

Catawba, universally known and esteemed, did uncommonly well with us during the past season. Query—With the proper culture, have we any native to compare with Catawba ? [We think we have something better.—Ed.]

Clara.—Untried, as far as I know, in this vicinity, but represented as mildewing badly thirty miles to the north of us.

Clinton.—Spoken of in the highest terms by some of our most experienced cultivators ; one, indeed—Mr. Edward Tatnall, well known to the horticultural world—thinks if he had but one variety to select, he would choose Clinton ; personally, I am unacquainted with this grape.

Concord.—A noble grape ; hardy, vigorous, and productive. This grape must certainly be finer with us than at the north.

Delaware.—What shall we say of the Delaware ? Almost every one has his vine *growing*, but the growth is decidedly slow. Of the superiority of the fruit, there can be no doubt. It will disappoint many on account of its smallness of berry ; as to its hardiness, there appears to be but one opinion. Every one who feels the slightest interest in the success of the American grape, should have a vine of Delaware ; but we cannot recommend it for vineyard culture, at least not yet, at $5 per layer. [You can get it for much less ; and ought to get it, even at that.—Ed.]

Diana.—One of the very best. With this grape I do not think there will be any disappointment ; like Catawba, only better if possible. Let it be planted everywhere.

Elsinburg.—A good *little* grape—sweet, but too small, except for the amateur's collection.

Emily mildewed badly with a friend near Germantown.

Garrigues.—Much like Isabella.

Graham.—Have never seen it fruited, but among Mr. Tatnall's collection it is one of the best growers, perfectly hardy.

Hartford Prolific.—Earlier than Isabella, but hardly as good.

Herbemont.—This with us is one of our best grapes; perfectly hardy and a good grower, and should be generally cultivated in this neighborhood.

Isabella.—Grown everywhere, and everywhere in this vicinity liked, when allowed to ripen, and not plucked in an immature state.

Rebecca.—From what I have seen of this grape, I should be very much inclined to fear that it is not hardy. I do not like to condemn it on my own experience, but all the vines I have seen here mildewed this season very badly, and some who were formerly its warmest friends, are disposed to give it the go-by. I would plant but sparingly of the Rebecca.

To Kalon.—Does very well with us; a large, fine grape, but not high flavored.

Union Village.—Larger than Isabella, but not so good.

Wilmington White.—Why is not this grape more noticed? It is hardy in this vicinity, at all events, and that is more than we can say for some of the strangers; a good grape, and should be more generally known and cultivated.

We have also a new grape, (who has not nowadays?) but this fruit makes its appearance under the care of gentlemen high in the art of horticulture, and not apt to be deceived. We do not know whether it has yet been christened, but believe that it is to be named the Brandywine. I know but little of the grape; it is well spoken of by those who have charge of the vine, and will be described at an early day by those to whom its merits are known. [We should be glad to know more about it.—Ed.]

With a very few words about pears, I will conclude. No one is better aware than yourself, of the difference of opinion that exists as to the success of dwarfs. Many utterly condemn; others, as well known, warmly recommend. For one, I belong to the middle class. I have succeeded well with my dwarfs, without extraordinary care or attention; others of my neighbors have done the same: I therefore know that, with proper culture and attention, they will please the eye and charm the palate; and I do not see why they will not pay grown on a larger scale, notwithstanding all that has been said to the contrary. Of this, I understand, we shall in the course of a few years have practical proof, one person in this county being so well convinced of the profits to be derived from dwarf fruit as to plant no less than twenty acres in dwarf pears. Of this I have been informed. But my article is assuming such an unwarrantable length, that I shall leave my ideas of dwarf pear culture for another occasion, merely alluding to my formerly expressed opinion, viz., that the Bartlett is one of the very best pears to grow on the quince stock, for the following reasons: The Bartlett is, when grown on the quince, second to none. It is far larger and higher flavored than when on the pear stock. Secondly, it is an annual crop, and never fails on the quince; we hear of pears having their bearing years, etc.; every year is a bearing year for the dwarf Bartlett. Thirdly, it is one of the finest growers we have on the quince, and the idea that has been promulgated about want of connection at the graft, is entirely fallacious. I have cultivated Bartletts in an exposed situation during six years, and neither have I, nor any of my neighbors, lost a tree, by having been blown off at the graft.

THE BUR-OAK, (QUERCUS MACROCARPA,) AS AN ORNAMENTAL TREE.

BY CHARLES BETTS.

IT was among the earliest efforts of our much-loved Downing to awaken the attention of rural improvers to the peculiar and varied beauties, and the excellent *adaptability*, of our native forest trees in ornamental planting; and with the aid of other pioneers in improvement, succeeded in rescuing many noble sons of the forest from the obscurity of their native ranges, which now are often the familiar and grateful objects of many a quiet door-yard, or the graceful or picturesque ornaments of the more extended and artistic pleasure-ground.

It is a most happy circumstance—thanks to Nature's timely forethought and unbounded store—that different localities are blest with so many different species, widely dissimilar in their characteristics of form and habits of growth. As a general rule in the selection of forest trees for rural embellishment, those belonging to our own locality are not only more easily obtained, but are better adapted to our wants than those from remote parts, being natural to the place: they harmonize with the landscape better. It is far more satisfactory, too, to have our own familiar friends about us than the strange faces of foreigners. Their beauties are unborrowed, they are inherent; their forms and vestments of green belong to their native haunts, and in a certain proper sense, are "not transferable." Yet the *beauty of variety* leads us to sprinkle in, sparingly, the trees and plants of other parts and other climes.

In the Western States, the *Bur-Oak* is one of our finest forest trees. It is always found skirting the small rich prairies of Michigan and Indiana, and often in groups, sometimes swelling into groves and broken belts in their midst; but it is found still more plentifully on alluvial soils of a peculiar character and richness, which are always designated as "Bur-Oak plains," or "Bur-Oak openings." No person having a spark of natural beauty within him, would fail to notice this remarkable tree. It is picturesque in the highest degree, and yet is so *graceful* that it peculiarly befits and adorns its own native, level plains and prairies. Some specimens are as regular and free-growing as a European Linden, while others are as irregular and gnarled as the most ardent lover of the picturesque could desire. Within view of my grounds, an aged monarch of the Bur-Oak family stands in the middle of a lane, with arms stretching twenty-five feet each way, a trunk three feet in diameter, and is about thirty feet high. This is the most noble and venerable individual it is my fortune to know.

During summer, the bark of the newly-formed wood of the young tree is of a rich buff color, and contrasts most charmingly with the dark green of the long, glossy leaves, and the dark, rough bark of the old wood. The half-graceful and half-picturesque character of this tree, united to the other qualities named, makes it a remarkable and attractive object on a lawn, or where growing wild on prairie or plain.

It is, indeed, a singular circumstance, that this fine tree has not been more extensively introduced into pleasure-grounds and parks: for place it where you may, it will at once give a prominent *individual* character to the place, or to any portion of the grounds. It produces seed in wonderful profusion,

so that I have known trees three inches in diameter, bear a peck of acorns. A tree of such properties, of so much "availability," ought to be spread far and wide.

FRUIT GROWER'S SOCIETY OF WESTERN NEW YORK.

ANNUAL MEETING AT ROCHESTER, JAN. 4, 1860.

This Society was organized in 1855, and is intended to include among its members all who are interested in fruit growing in the counties west of and including Oswego and Onondaga. After the usual formalities of organization, the committees on nominations and on subjects for discussion were appointed. The officers of last year were unanimously reëlected. We give their names in our "Table."

The President's address was one of exceeding merit, and will be published by the Society, together with the reports of the committees and a full report of the proceedings. Copies of these transactions can be obtained by inclosing a stamp to the Secretary.

Our reporter has furnished us a brief abstract of the proceedings, which will well repay a perusal.

The discussions were commenced upon the question, *Is the Dwarf Pear a humbug?*

Mr. Pinney, of Clarkson, was most decidedly of opinion that there is at least one sort which is not a humbug. The Louise Bonne de Jersey will bear as much fruit on the same size of limbs as any other stock; when full grown it will bear two bushels to the stock. Has seen one and a half and even two bushels upon a tree eight years old—two years old when set. There are other sorts which bear in proportion. The Vergouleuse, if it would do well, is nearest to Louise Bonne de Jersey, as grown by myself. There are some sorts in which I have but little confidence compared with Louise Bonne de Jersey. If I had 100 acres to set out now to pears, I would set at least half of them dwarf pears.

Mr. Townsend, of Lockport. The crops of fruit from Louise Bonne de Jersey dwarf trees have been three to one of any other variety I have ever cultivated, and I join heartily with Mr. Pinney in asserting that the dwarf pear is not a humbug. Were I to commence planting pear-trees again, I am sure, from the experience which I have had, that I would not plant a standard tree. I plant dwarfs in rows twelve feet apart and six to eight feet in the row; give the trees thorough cultivation; and if upon a soil moderately clayey, your dwarfs will certainly succeed.

Samuel Jay, of Yates. In these orchards, and in all orchards, we need a thorough stirring of the whole surface of the ground; no portion allowed to weeds or grass. A fruit orchard should be a fruit garden, and this is where most men fail. Post holes spaded around trees won't answer.

Mr. Coppock, of Buffalo, would endorse all that friends here have said. Dwarf pears around Buffalo do well; Vicar of Winkfield does very well. In cultivation of dwarf pear-trees any spading near the trees is decidedly bad; the fibrous roots near the surface are cut off. No implement should be used near the tree except a fork.

C. M. Hooker, of Rochester. The question is often asked how many sorts

of pears can be successfully cultivated on quince. Our pear orchard of eighty varieties has been set three years, and over seventy sorts are doing finely.

In answer to question, what sorts do not do well as dwarfs, Mr. Ellwanger named Beurré Bosc, Sheldon, Dix, Paradise d'Automne. Vergouleuse is better for double working. Some are always poor as standards, as the Belle Lucrative.

Mr. Beadle, of Canada. Belle Lucrative as dwarfs invariably had borne very large fruit and fine crops.

Mr. Frost, of Rochester. Duchesse d'Angoulême is peculiarly good as a dwarf: two trees in 1858 had yielded two and three bushels, and in 1859 three and a half bushels.

Mr. Brooks, of Pearl Creek. If anything needs particular cultivation, don't send it out to us farmers. You can't by any possibility induce a farmer to drive a cultivator through an orchard once in two weeks—four weeks—no, nor two months! If dwarf pear-trees need good cultivation, better not recommend them.

Mr. Smith, of Syracuse. The gentleman might as well advise us not to sell Durhams or other fine breeds of cattle to farmers, because they thrive better under care, and because fine breeds sometimes fail. Yet when cattle are well treated they generally do well, and when pear-trees are well treated they also do well.

Mr. Brooks. Farmers make some one thing prominent. Farmers will use stock well; but fruit-trees are a little one side—a little out of their line. Some gentlemen have advised that every farmer should have dwarf pear-trees in his garden, thinking that in a nice garden the trees will of course have good cultivation. Now, what we in our country call a garden is a place back of the house, where we have a few hills of potatoes, and several hundred—(hesitates and blushes)—several hundred—*pig-weeds*—(great laughter).

Mr. Ainsworth, of Bloomfield, some time ago said something against dwarf pear-trees; but would admit that some varieties succeeded far better as dwarfs than as standards. Louise Bonne de Jersey, for instance, bears double the crop for the same amount of space, and is better in flavor also, and larger. Another advantage is, that the fruit ripens every year. Vicar of Winkfield on standards is not worth anything, unless for cooking; while from dwarf trees this sort bears well and ripens well. The ground of Mr. A.'s orchard is stirred all over every week with a double horse cultivator, and the trees are pruned thoroughly, so as to get a vigorous growth of wood each year. Soil is a good wheat soil; has raised thirty-four bushels to the acre.

Mr. Yeomans spoke of one-third of an acre of Duchesse d'Angoulême, eight years from the bud last spring, planted in a strong loam soil, and bore last summer thirty barrels of pears—netted $500. Can keep four or five acres of orchard clean as easily as I can take care of one acre of pota-

Mr. Ellwanger, in answer to a question, said that eight by ten feet apart would be one thousand trees to the acre, and Louise Bonne de Jersey will average a bushel per tree. Fruit should be regularly thinned as it grows, and when picked should be assorted, and only the finest sent to market.

Mr. Barry. One great advantage of the dwarf is its earliness in bearing: even aged people can plant the trees and eat the fruit thereof. Again, the

dwarf is more easily and safely removed than the standard, and not one in a hundred need fail, while they are not liable to any more diseases than the standards. Trusts the day is coming when farmers will plant dwarf pear-trees in abundance, and enjoy their fruits. To the nurserymen the dwarf pear is one of the greatest blessings. In every part of the United States the nurseryman is able very speedily to test all these sorts, and to recommend them, while it would not have been practicable to test them upon standard stocks. Would not advise farmers to plant a great many varieties. Anybody can succeed with some kinds,(Jaminette, for instance,) that knows enough to shorten the branches, and cultivate as well as a hill of corn.

Best protection of fruit-trees from the effects of severe winter—shelter—underdraining, &c., and the hardiest sorts of apples and pears.

J. J. Thomas, of Macedon, spoke of parts of the United States, like Illinois, where winds are high, and farmers feel the necessity of shelter from wintry winds. Trees must have plenty of sun and air; but the more they are protected from violent winds, the better they stand the winter.

Mr. Barry. In pear cultivation, particularly, shelter is of especial consequence. It not only protects the trees in winter and spring, but in autumn prevents the fruit from being shaken off by the winds. "Underdraining:" the soil must be dry; draining is the great essential. As to hardiest sorts, our Western New York is hardly a fair test. For instance, Baldwin is perfectly hardy here, and at the West is not so. A capital shelter can be formed of evergreen hedges; plenty of them grow three or four feet per year. You can make in ten years, with larch and spruce, such a barrier against fierce winds as cannot be made of boards.

Mr. Brooks. Farmers do not realize how important these barriers are for shelter even of their grain crops. Believed such barriers should cover the entire area of the country.

Col. Hodge. The fact is, that the great body of farmers care nothing about putting out trees; but at the West some are commencing to plant Locust and other rapid-growing trees.

Mr. Beadle has confidence that belts of timber will be put out; for the shelter benefits the cattle. The wheat crops are improved by belts of trees, and in Canada farmers are beginning to plant them at the west sides of their farms. If Norway Spruce, &c., are planted at the same time with our orchards, they will soon be as high as our orchards, and higher, and speedily we shall have good shelter.

Mr. Barry mentioned the case of two wheat fields side by side, on one of which the crop was good, and on the other none. The farmer could assign no reason except that the field bearing the fine crop was sheltered against the sweeping west winds. Now, the loss in that one wheat field alone from the failure of the crop, was enough to have bought and planted full shelters of evergreen trees to the farm.

Judge Miller. We cannot leave the forest trees, because from their place of growth twenty or thirty feet of the body have no limbs, thus giving, when their comrades are cut away, a strong leverage power to the wind against the head of the tree, while the looseness of the soil permits the roots to be speedily torn up and the tree to fall.

Mr. Ainsworth. Where fields slope toward the east, crops are generally good; seldom killed by frosts; while on land sloping to the west the wind strikes hard; snow blows off, and crops are apt to be winter-killed.

Mr. Yeomans. About the planting of these belts of timber, people anticipate that the advantage is to come so slowly they won't do it. Have seen great advantage from planting apple and peach trees alternately. The great mass of the orchard won't be injured at all by sweeping winds.

Grape Culture—Propagation, Growth, and Market Value.—The question was asked, Cannot we graft a good substitute upon our vines, and get them to bear the first or second year?

Mr. P. Bissell. The grafting of the grape-vine during the full flow of the sap is a difficult matter, but there is an old process called inarching, (it is spoken of in the HORTICULTURIST for January, 1860,) by which nearly all the risks are removed to a skilful operator. Root-grafting the grape is not difficult. We "saddle-graft" all our "single eyes." As to the growth. In the summer of 1858 we propagated Dianas and other grapes in this way. In the spring of 1859 the plants stood in the pots, and nurserymen and other buyers selected such as they wished from the stock. About 700 were left, which were of course not the best, and we set them out in our nursery rows. Not one of those culls died; all made good growth, and some of them fruited. Agents took those two year old vines, and delivered to customers with the fruit on. Can a layer bear quicker?

Mr. C. L. Hoag. Likes pot plants better than layers. In spring of 1856 set out slender Dianas from pots, and they averaged forty clusters in three years.

Mr. Ellwanger has grafted the Diana just as well in the open ground as the apple. Wait until just after the vines have made a fair start, then graft on a level with the surface of the soil; heap soil around the junction, and cover all the scion except one bud with earth.

Mr. Townsend. Must wait until after the first great rush of the sap.

Mr. Ainsworth. The grape can be grafted with very little difficulty in the winter. When growth begins the lower part of scion calluses over, and throws out roots, while the roots upon which it was grafted will die. The advantage of pot vines is, that you have every fibre of the root; while in layers many must necessarily be cut or broken off. While the layer is recuperating its energies and throwing out new roots, the pot-vine has nothing to do but grow. Have had Delawares which this year have grown fifteen feet, which in spring of 1859 were hardly the size of a knitting needle. Layers, as they are commonly taken up, have plenty of big roots; but of the fibrous roots, the real food vessels of the plant, they have not one-tenth as many as the pot plants. Shake all the dirt out and spread the roots thoroughly. Diana and Concord plants that I started in pots in a cold glass house in spring of 1859, were turned out from the pots into the nursery, and grew so as to form layers, and in some cases double layered and rooted.

L. B. Langworthy. The first Clinton grape in this county I grafted upon an old vine, waiting till the sap had pretty well run in the spring. I have grafted upon old wild vines, and had the scions bear fruit in two years.

F. B. Peck thinks it advisable to protect the Isabella during our winters. In the winter of 1858–9, the vines killed worse than ever before. Knows it was the exposure, because vines that happened to be dropped off the trellises did not kill as badly: part that lay on the ground grew vigorously. It was not the wood that winter killed, only the buds.

J. J. Thomas. Dr. H. H. Farley left 2000 grape-vines unprotected in the

winter of 1858–9, and had far smaller crops than usual in the summer of 1859; would have saved $2,000 if he had covered the vines.

Mr. Peck. A neighbor has 1,000 vines same age as mine, (three years set,) which stand in a sheltered situation near some woods, and he gathered 3000 pounds from his 1000 vines as his first crop.

D. W. Beadle, of Canada. Easiest and best mode of protecting is to lay the vines on the ground, and cover them lightly with soil. Straw is objectionable, because it furnishes a harbor for the ground mice. Evergreens are difficult to get.

Mr. Ringueberg tried three parallel rows, leaving one row fastened to the stake, the next row simply laid on surface of ground, and third row covered. The first row did well; the next row better, and the third row fruited 20 per cent. better than those which were simply laid down. Thinks it paid him well to cover every Isabella vine in his vineyard.

Mr. Ainsworth laid down his vines each year; while a neighbor who does not cover, has lost his crop partially each year for the last five years. Mr. A. trains on the renewal system. Branches should not be allowed to run nearer than eighteen inches to the earth; else fruit gets sandy.

P. Barry thinks upon east or south side of board fence the fruit will ripen much better than on a trellis or stake.

Mr. Peck. Much more liable to mildew on south side of fence. My Catawbas ripened this year very well upon an open trellis; but they are not the grape to cultivate here; not early enough.

P. Barry. Plants are not in danger from mildew if the trellis be a little way from the wall. Has tried Delaware, Diana, Rebecca, &c., in that manner. Delaware was remarkably vigorous; last season's canes were fifteen to eighteen feet in height, and thick.

H. B. Miner. Never had a really ripe Isabella or Catawba on an open trellis, while on south and east sides of house both ripen well. Diana ripens on open trellis.

W. P. Townsend. As to ripe Catawbas, a neighbor has ripened three successive crops of Catawbas upon a side hill sloping to the south and southeast—well sheltered: leached ashes the only manure. This year sold 1,100 pounds for twenty-two cents per pound; box and all. Unless in especial cases like this, would not recommend Catawba.

J. J. Thomas here spoke of Dr. Farley's vineyard. 1st. Dr. F. thoroughly tile-drained the land. 2d. Plowed and subsoiled. 3d. Put on 100 to 200 loads of lake mud, and worked it into a soil which was fertile before. Results in 1859, when under ordinary circumstances I did not see an Isabella fully ripe, Dr. Farley's were perfectly ripe. I never saw a sight equal to it. The vines were planted in rows ten feet apart, running north and south, and set twelve feet apart in the rows; were trained to wire trellises seven feet high, and were pruned according to the renewal system.

Mr. Brooks appealed to farmers. Hoped the culture of grapes might be extended; wished the increase of all fruit, and even of—dwarf pears, (audible smiles.)

Comparative merits, all things considered, of pears, apples, and small fruits, for extensive market cultivation by skilful cultivators?

Mr. Sharpe. Will guarantee that as soon as the farmers in my section of country can be convinced that there is money to be made in the culture of dwarf pears, they will take good care of the trees.

Mr. Brooks. The cultivators of pears for market should be small landholders. Large farmers must have things easily cultivated for the present; but the day will come when every holder of land, however great or small, will be considered disgraced if he don't supply his family freely with such luxuries as we see here before us, (waving his hands to the loaded tables;) and they are the greatest under heaven.

P. Barry. The merits of the different fruits depend on the circumstances and situation of cultivators. Near large cities perhaps small fruits would exceed the others; but, where the crops must be barrelled up and sent by railroad, then apples and pears will be best. Do not depend solely upon any one sort of crop. Considering our climate, soil, help at command, convenience of transportation, &c., we in Western New York can't go amiss. The estimated value of the apple crop in Niagara county alone was $500,000. Just think of nice pears bringing $18 and $20 per barrel in New York city, and good winter pears would sell for more. There are risks to be run in the cultivation of the pear, and so are there risks in raising wheat, and potatoes, and maize; but to the skilful cultivator the pear now offers the greatest inducements.

In answer to a question, Mr. B. said, I think the pear crop is uniformly more certain than the apple. If trees die from blight, fill up from a reserve which you have ready.

Mr. Townsend, of Lockport, mentioned a gentleman who had travelled in every State of the United States, and in all Europe, within sixteen months, and had seen no apples like those exhibited here to-day; and except very few pears, none like ours. Western New York will become the home of the pear in the United States. If I were going to set pear-trees again, would never set a standard. Would not recommend a man to plant trees unless he means to take care of them.

Mr. Smith, of Syracuse. The taste of the people is being cultivated, and they are willing to pay for good fruit. A few years ago, I met at Syracuse a man going home with his pears because he could not sell them at $1 25 per bushel. The price this year for the same variety is $4 00 per bushel. In planting pears I would not care to plant any but dwarfs.

Mr. Hodge, of Buffalo. It has been an argument against the culture of pears because prices have gone up. The fact is, that half the people never saw a good pear; and now that they have seen and tasted good fruit, they are willing to pay for it; and instead of being an argument against pear culture, it is one of the strongest arguments in favor of good, proper, and careful cultivation.

S. Miller. Judging from the habits of gentlemen in the city of New York, that market is entirely inexhaustible. Is perfectly certain it will absorb all that the western part of the State can produce.

Mr. Brooks, of Wyoming Co. Has seen Baldwin apple-trees in this garden of Western New York, when each tree netted a greater profit than the average acre of land in Wyoming County. Some persons fear lest the market will be glutted. If so, give fruit to the horses—to cattle—to hogs—to hens—there is nothing that lives, *or ought to live*, will refuse a good apple. (Great laughter.)

Mr. Ainsworth. The net profits per acre of the apple crop will average five times as much per year as the wheat crop. If dwarf pear-trees bear early, standards are long-lived. Judge Howell, of Canandaigua, has for

forty years sold his crop from the same trees at $3 00 per bushel. I believe we can get a bushel of pears from a standard tree before we can get that quantity of apples from a tree: you can set 160 standard pear-trees to the acre, and only forty apple-trees; and in market pears will bring $3 00 and $4 00 per bushel, and apples only $1 00 per bushel. Pears need more care than apples; but not as much as wheat or corn. Certainly the pear, with present prices and prospects, is six to eight times as profitable as the apple. The great secret is good tillage and proper pruning.

Mr. Beadle. Neighbors in Canada, upon a soil admirably suited to pears, are raising apples and shipping to Scotland for $2 50 per barrel. Pears are certainly far the most profitable.

Mr. Ellwanger. Twenty-five years ago there were not 100 pear-trees in this city. It was in 1845 that the first dwarf pear-trees came—I brought them myself. Pears are not propagated as extensively as apples.

Mr. Barry. It requires skill and care to grow pears. Farmers have not experience yet, except in wheat, &c.; but one by one will go into pear culture as fast as they can get information.

Value of Super-phosphate of Lime and other Special Manures for Fruit Trees and Vines.—Several gentlemen spoke, but all inclined to the opinion that the same money spent in stable manure produced as good effect as any of the special manures.

The Percentage of Years that the Peach-Tree Bears in the Various Portions of Western New York, and what Places are Best for it.—Mr. Yeomans had had not more than three or four entire failures of the crop in thirty years. In one part found my trees dying, and underdrained the land and succeeded. A single acre bore 270 bushels of peaches on trees only six years old. Each year after the tree has borne, cuts out about one-third of the top, which gives increased vigor to the centre of the tree.

President Hodge. Whenever thermometer shows 15° below zero the peach crop is sure to be destroyed, especially if the sun shines after the frost. The trees must be vigorous and healthy to succeed, and if in non-producing years they are pruned very closely, they will throw out vigorous shoots all through the centre of the tree, and bear full crops.

J. J. Thomas. Close to Cayuga Lake the peach crop scarcely ever fails. Prunes same as Mr. Yeomans does.

What is the Best Manner of Preparing Ground for Orchards?—Mr. Smith of Syracuse. 1st. Underdrain, especially if it be a strong soil. 2d. Subsoil to at least 20 inches deep. 3d. Make it rich enough to be suitable for corn.

Mr. Barry. Has been looking at land a good deal this summer, and has hardly seen an acre suitable for a nursery or orchard without tile-draining. Land may be dry in summer, and yet need draining very much for trees which are to stand in it the year round. My drains are 2 1-2 to 3 feet deep, and average about six feet apart, following the conformation of the land. Cost about $30 per acre. For an orchard I would prefer land which had been seeded down to clover. Would tile-drain it. Would turn the clover under 8 inches; follow with subsoil plow and four horses. Our men never plow deep enough. We keep a foreman to watch them all day, and then they don't go deep enough. Would not apply manures in an excavation near the tree.

What is the Best Manner of Preparing and Planting Trees?—Mr.

Yeomans. Before the tree is planted, cut off all the branches to restore balance between roots and plant; the winds will sway it less, and new branches will be thrown out in abundance. Apples should be pruned so that the lower branches shall be about five feet from the ground; the nearer the ground the poorer the fruit; lower branches do not bear as good fruit as the upper.

Here a gentleman recommended pruning so as not to leave any lower branches!

Mr. Yeomans plants his apple-trees forty feet apart each way, and the peach-trees alternately in rows.

Mr. Barry. In planting dwarf pear-trees, it is better always to cover the stock as high as the union of the quince with the pear. To train trees with low heads is one of the first principles of fruit raising, so that even if set on the prairies, they would present to the wind nothing but a mass of branches and foliage: no tall trunk for leverage.

B. Fish. In planting his orchard, cut off some of his trees a couple of feet from the ground—some only partially cut back. Those where I cut off the entire top made a rapid growth, and are now the handsomest trees altogether.

Mr. Langworthy. Some gentlemen have spoken of plowing among their trees. I never plowed in an orchard but I heard the roots crack. Would never advise anything heavier among trees than a common cultivator.

What is the most suitable Age for Planting Fruit Trees?—Mr. Hodge. Peach, 1 year from bud. Would give more for a yearling than for one 2 or 3 years old. Cherry, 2 years from bud, and only 4 to 6 feet high. Pear—dwarf, 2 years from bud. Standard, 4 to 6 feet high. Apple, 3 to 4 years from graft, about 6 feet high. In small trees we are apt to get all the fibres, the spongioles, which do the real nourishing to the roots and tree.

J. J. Thomas. Peach-trees will bear cutting back better than most other fruits. They have a great power of reproducing shoots. If thoroughly cut back you may remove even a large peach-tree.

H. N. Langworthy. Danger in buying peach-trees older than one year, that you get the peach-borer brought. Never saw the borer in a yearling tree, and if you have not got them you need not have them, only don't buy trees with them in.

Is Spring or Fall Planting preferable on Dry Soil?—Mr. Frost of Rochester. Apple, Pear, Plum, and Cherry, plant in fall; Peach in spring. A great advantage in fall planting is, that the planter has a whole long season to get the ground ready.

Mr. Bloss of Rochester. Sudden alternations of heat and cold in spring, so that the season is not to be depended upon. A fall planted tree gets fixed and ground settled well.

Jno. J. Thomas. One advantage of spring planting is, that the ground has been recently stirred. Cultivators who never cultivate had better set out in the spring.

A committee was appointed, who brought forward appropriate resolutions on the death of David Thomas, the botanist, the pomologist, and the Christian gentleman.

The Society adjourned to meet at Buffalo in June next.

EDITORS TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, &c., intended for the perusal of the Editor, and packages by Express, should be directed to the care of C. M. Saxton, 25 Park Row, New York. Exchanges should be addressed to "The Horticulturist."

On taking our seat at the "Table," we desire first of all to thank our friends for the handsome manner in which they have come to our support. From all parts of the country we have received letters from friends, containing the most hearty congratulations and good wishes. These we had intended to answer, but they have accumulated so fast and to such an extent, that, for the present, we find the thing quite impossible. We therefore take this occasion to thank them one and all; we have them in our heart, and we feel greatly encouraged and comforted by the many good things they have said. We shall endeavor, by our labors on the magazine, to deserve it all.

We have lost a few of our old subscribers, chiefly on the ground that the magazine is not practical enough. This cause of complaint we shall in good time remove, and thus hope to win them back again. The accession of new subscribers, however, has been ten times greater than all we have lost, and they are still coming in. Let the good work go on.

Several communications, which we should have been glad to publish in this number, must necessarily go over to the next, in consequence of the pressure on our columns and the late hour at which they were received.

Washington Irving.—Just as our January number went to press, the telegraph announced the death of Washington Irving. We had intended to prepare an obituary for the present number; but this has been so fully and universally done by the press all over the country, that we may well spare ourselves the melancholy pleasure; his eulogy will have been read by everybody long before this number reaches our readers. We can not, however, let the occasion go by without a passing tribute to the memory of one whom we had long known, respected, and loved. It needed not that his eulogy should have been written with pen and ink; it was spontaneously uttered by the whole American people. By his rare talents as a writer and his sterling and amiable qualities as a man, he made himself loved as no American writer was ever loved before. His name will be cherished among our Lares and Penates as long as the English language is read.

Late Fruiting Strawberries.—Mr. F. W. Lemosy, writing not long since from Portsmouth, Va., says: "My Albany Seedling Strawberry is full of green fruit, and many berries large and fully ripe. Is it customary for it to bear at this season?" Last fall we had fruit on the Wilson, Burr's New Pine, Scott's Seedling, and some others; and in October we had a nice plate of the Crimson Cone at a friend's in New Jersey. We have often had a second crop from Burr's New Pine and the Boston Pine. We believe it was no very uncommon thing for some varieties of the strawberry to produce a second crop last fall.

LORD RAGLAN ROSE.—In answer to some inquiries, we desire to supply some omissions in regard to this fine rose, figured in our January number. It is a Hybrid Perpetual, and as hardy as any of that class. It needs no protection, except at the extreme north, and there but little. A rose never requires but a light covering under any circumstances. More plants are annually killed by thick covering than by the severity of the frost.

ORCHARD HOUSES.—Mr. U. Cousins, writing from Biloxi, Miss., says that he is building an orchard house, "which is a great novelty to those who have seen it;" and adds, that he "expects to astonish the folks next summer." We hope he may, and himself too, with the most gratifying results. We wish him abundant success, and thank him for the good things he says of the HORTICULTURIST. We have no doubt that ten years hence orchard houses will be as common as graperies now are.

KING APPLE.—Mr. Mattison, of Jacksonville, N. Y., left on our table some large and very fine specimens of the King Apple and the Henrick Sweet, for which he will please accept our thanks. Of the latter, however, we only saw the fragments, the rats in our "sanctum" having not only decided pomological tastes, but a "sweet tooth" as well. We have given the ill-mannered brutes notice to quit. The King of Tompkins Co. we found to be in all respects first-rate.

BROOKLYN HORTICULTURAL SOCIETY.—The members of this enterprising Society held their anniversary meeting at their room on Tuesday evening, January 3. Among those present we noticed John Maxwell, W. C. Langley, J. Hazlehurst, Esqrs., and other lovers of horticulture. Mere business matters were dispensed with, the evening being taken up with the annual address of the president, John W. Degrauw, Esq., whose zealous labors in behalf of the Society over which he presides are worthy of the warmest commendation. The address was exceedingly appropriate, and listened to with marked attention, the speaker at its close being warmly applauded. We were much pleased with it, and copied several passages for our "Table." The following comparison between art and nature is well done:

"We do not assume that human structures cannot command admiration without the help of resemblances to natural objects, but we allude to the inferiority of human arts when compared to the works of nature. If we take a view of nature in all her phases, what is the cannon's roar to the wild thunder of the skies? What is the devastation of combined armies to the awful ruin of an earthquake, levelling cities in the dust and swallowing millions in the chasm? By redoubled efforts man may indeed clear the trees of a forest, but the tornado prostrates for miles in length the sturdy oaks, tearing them up from their entangled foundations. Nature, we know, stretches unbounded over all, mighty and infinite. We see the lofty elm rise from a shrub, to spread its giant arms in the air, and the broad meadow smile in its season, and dispense its perfume to the gale. What is the concert of united instruments to the simple melody of the lark, the mournful song of the nightingale, and the boding scream of the bird of darkness? Sublimity is the noblest feature in every picture; it compensates for deficiencies in many other respects. It is this that touches off the scenes of nature with peculiar grandeur, and adds to the most insignificant part an unusual degree of beauty."

The Society, by force of its inherent vigor, has been successful in the material of its exhibitions to a high degree, but has not met with as much patronage and encouragement from the public as it had a right to expect. The citizens of Brooklyn do not yet seem to realize what a beneficent instrumentality they have in their very midst; there are others quite as unhappily constituted, to whom the President thus addresses himself:

"It would appear to be almost incredible, that a Society that has done so much for the character of our city in the cause of horticulture, should not have been better sustained; and what has been done to any extent has been the work of a few individuals. In making this appeal to

the citizens of Brooklyn, we do not come before them as the applicants for charity. Three dollars a year to have the privilege of visiting, with their families, nine exhibitions, at any time during day or evening, or as often as they please, is certainly but a very small compensation for the value received. Therefore we say to the citizens of Brooklyn, if you regard taste and refinement, if you love the beautiful and its happy influences, unite with us to sustain these most happy results, as well as to extend a science that has obtained the homage and devotion of the best men the nation has ever produced."

At the close of the address a resolution was passed that it should be printed; the Society then adjourned to the residence of J. Hazlehurst, Esq., one of the Vice-Presidents, where the rest of the evening was passed in social enjoyment. We shall recur to the address again.

At a subsequent meeting the Premium Committee reported a schedule of prizes, and the Society fixed the time for holding the April and September exhibitions: the first will be held on the 11th, 12th, and 13th of April; the last on the 19th, 20th, and 21st of September. The time for the June Exhibition was not determined upon. The list of prizes is a very liberal one, and ought to insure a good exhibition.

THE HOMESTEAD.—With the new year *The Homestead* has put on a new dress, which we like better than the old one. It is now published in the *octavo* form, with twenty-four pages of matter instead of sixteen. The price remains the same, and the contents, if anything, are better than ever. See our clubbing list.

INDIANA FARMER.—We failed to get the *Indiana Farmer* just right last month, though the paper itself is right enough. It is issued every two weeks instead of four, at $1 a year. J. N. Ray, editor and publisher, Indianapolis, Ind. Messrs. J. A. Nash, R. Owen, W. H. Loomis, and L. Bollman, corresponding editors. The *Great Western Farmer* is issued *weekly* from the same office, at $2 a year. *The Farmer* for the new year is very much enlarged and improved.

We shall be glad to correct any mistakes or supply any omissions made in our published list.

SOUTHERN RURAL MAGAZINE: THE AMERICAN COTTON PLANTER AND SOIL OF THE SOUTH.—The January number of this excellent magazine comes to us greatly enlarged and improved; the subscription price has in consequence been raised to $2 a year; it is cheap at that. Dr. Cloud is an able and thorough-going editor, and his magazine deserves a generous support.

ROCKWELL'S WINES.—We have received samples of these wines, manufactured by Mr. Rockwell, of Ridgefield, Conn. The grape wine is made of the native grape, and is a real wine, and not, like a good deal of stuff in the market, a mere mixture. It took the first prize at the Connecticut Show, and the gold medal of the American Institute at its late Fair. We esteem it a pure, well made article, much to be preferred to many imported wines. Mr. Rockwell manufactures it chiefly for sacramental purposes; and for such, and to all who love the pure, unadulterated juice of the grape, we commend it. The Blackerry Wine is intended for medicinal purposes, and being pure, meets a much-needed want.

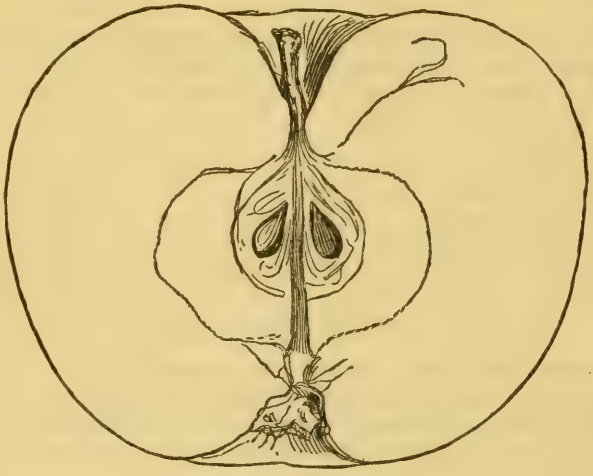
THE ILLINOIS FARMER.—Mr. Francis has retired from the editorial chair of the *Farmer*, and is succeeded by Mr. M. L. Dunlap, formerly of the Chicago *Press and Tribune*. We club with the *Farmer*, and send it and the HORTICULTURIST at $2 50 per year.

THE GARDENER'S MONTHLY for January comes to us changed to an *octavo*; a change of form very much for the better. It is a very fine number. We also club with the *Gardener's Monthly*.

HARPER'S MONTHLY.—This giant of the monthlies continues to grow in public favor. The January number is a capital one, with a rich and varied table of contents, in which all may find something suited to their tastes. It should find its way into every family, and so should the HORTICULTURIST; and to further this happy consummation, we will send both magazines for the exceedingly low sum of $3 75 per annum. That, we think, ought to do it.

THE FARMER'S ADVOCATE.—We omitted this weekly in our list last month. It is published at Chicago, Ill., at $1 25 per annum. J. C. Medill & Co., editors and publishers; Charles Betts, Corresponding Editor.

THE BAKER APPLE.—Mr. Rockwell has sent us fine specimens of this comparatively little known apple. We saw it at the last Fair of the American Institute, where, as one of the "tasters," we had a good opportunity of proving it as a cooking fruit, and found it to be one of the best. As a table apple we find it to be moderately good. Its native place is Ridgefield, Conn. We are informed that the original tree was in full bearing during the Revolutionary



war, and was owned by Dr. Baker, who died some forty years since. It is still but little known outside of the locality where it originated. The tree is said to be very vigorous, and an abundant bearer. The fruit is large, and in season for the kitchen from September to February. Form round, approaching to oblate; calyx small, closed, and set in a shallow basin; stem rather short, stout, and set in a cavity of medium depth; skin yellow, shaded with red and striped with crimson; flesh often tinged with crimson near the skin, tender, moderately juicy, with a pleasant subacid flavor.

THE MAGAZINE OF HORTICULTURE. Edited by C. M. Hovey. The January number of this old pioneer magazine is one of the best.

CHRISTIAN ADVOCATE AND JOURNAL. Edited by Abel Stevens, D. D. Carlton & Porter, publishers, New York.—The original of the Advocate family, now a pretty large one. It always has some choice things for the farmer and gardener. It is conducted with great ability.

WE omitted to mention, in our notice of the new volume of the *American Stock Journal*, the accession of Dr. Dadd to the veterinary department. He is well known as being among the first of his profession, and his labors will give an additional value to the pages of the *Journal*.

We are indebted to Mr. Chorlton for a fine assortment of Camellias: Alba Plena, Imbricata, Fimbriata, Donkelaarii, Lady Hume, Prattii, &c., all large and delicious blooms.

The *City and Farm* was omitted in our list last month. It is published weekly at Wheeling, Va., at $1 25 per annum.

The Constitution, By-Laws, &c., of the Portland Horticultural Society, organized November, 1859. We hope this young Society may grow up to be a giant in usefulness. We print a list of its officers elsewhere.

The Rural Annual and Horticultural Directory.—Joseph Harris, office of the Genesee Farmer, Rochester, N. Y. Price, 25 cents. May also be had of Saxton, Barker & Co., 25 Park Row, New York. An exceedingly useful little manual for the farmer, gardener, and fruit-grower. It is abundantly illustrated.

The Year Book of the Farm and Garden, for 1860. A. M. Spangler, "Farmer and Gardener" office, Philadelphia. This is a new candidate for public favor, nicely printed on clean white paper, and beautifully illustrated. Its contents are well made up of just such matter as the farmer and gardener want. Price 25 cents. For sale also by Saxton, Barker & Co., 25 Park Row.

Catalogues, &c., Received.—Descriptive Catalogue of Fruit and Ornamental Trees, Grape-Vines, Shrubs, Roses, &c., cultivated and for sale at the Suscol Nurseries, situated on the Napa River, at the Suscol Ferry, Napa Co., California. S. Thompson, proprietor.—We can say a good word for the *contents* of this catalogue, but the printer is a barbarian.

Descriptive Catalogue of Flower Seeds, with Practical Directions for their Culture and Treatment, for sale at *Bridgeman's Horticultural Establishment*, Nos. 876 and 878 Broadway, New York. Nursery and Greenhouses, Astoria, N. Y. Alfred Bridgeman, Principal of the Seed Department. Andrew Bridgeman, Principal of the Nursery and Greenhouse Department.—In its arrangement, completeness, and freedom from errors, this is one of the best catalogues we have yet seen. It embraces everything worth having, including many choice things of recent introduction. It is beautifully printed.

Descriptive Catalogue of Foreign and Native Grape-Vines, for Gardens, Graperies, and Vineyards, with Remarks on their Culture. Wm. R. Prince & Co., Flushing, L. I. Forty-fourth Edition.—Mr. Prince is certainly an industrious collector of vines; we have here the names of upward of *three hundred* varieties of native grapes, *not* including the Delaware, which he has perversely placed in his foreign list. So be it; but where will it go next?

J. M. Thorburn & Co.'s Descriptive Catalogue of Vegetable and Agricultural Seeds, &c. Garden, Field, Fruit, &c., Seeds. The largest collection to be found in the world, embracing every standard and improved variety. Also, tested novelties, both of Domestic and Foreign origin, that are suited to the climate of the United States.—A very ample, complete, and well arranged catalogue, with brief directions for culture.

Catalogue of Selected Roses, and other hardy Plants, including both new and old varieties, cultivated and for sale by James Pentland, at Green Mount Garden, on York Road and Oliver street (opposite entrance to Green Mount Cemetery), Baltimore.—A choice collection, neatly printed on clean white paper.

Descriptive Catalogue of Garden Seeds. Also a List of Flower Seeds, Implements, Books, &c. H. A. Dreer, 327 Chestnut street, Philadelphia.—A choice collection.

Evergreen Nursery, Woodbury, N. J. David J. Griscom, proprietor. Descriptive Catalogue of Foreign and Native Evergreen and Deciduous Trees, Fruits, Vines, &c.—Well got up.

Texas Edition of *Affleck's Southern Rural Almanac*, and Plantation and Garden Calendar, for 1860. By Thomas Affleck, Central Nurseries, near Brenham, Washington Co., Texas; Southern Nurseries, Washington, Adams Co., Miss.—A useful publication for our Southern friends.

OFFICERS, &c., of Horticultural and Agricultural Societies for 1860.

BROOKLYN HORTICULTURAL SOCIETY.—*President*, John W. Degrauw. *Vice-Presidents*, John Maxwell, Jas. Hazlehurst, W. C. Langley, J. S. T. Stranahan, Smith J. Eastman. *Treasurer*, John W. Degrauw. *Corresponding Secretary*, Jas. Hazlehurst. *Recording Secretary*, Edwin Scott. *Executive Committee*, Ira Smith, M. Brandigee, E. G. Taylor. *Finance Committee*, Jas. Hazlehurst, Walter Park, George Gamgee. *Librarian*, J. E. Rauch. *Library Committee*, J. S. T. Stranahan, A. A. Low, L. B. Wyman. *Premium Committee*, Geo. Gamgee, Thos. Templeton, Daniel Murphy, J. E. Rauch, Geo. Hamlyn. *Fruit Committee*, Geo. Gamgee, George Ingram, Jas. Weir. *Plants and Flower Committee*, J. E. Rauch. J. Dailledouze, M. Murray. *Vegetable Committee*, George Hamlyn, M. Riddey, Henry Furman. *Inspectors of Election*, Henry Hudson, M. Poynter, Geo. Gamgee.

NEW YORK HORTICULTURAL SOCIETY.—*President*, John Groshon. *Vice-Presidents*, Peter Cooper, Henry A. Heiser, Henry A. Hurlbut, James E. Cooley, H. M. Schieffelin. *Treasurer*, James Knight, M. D. *Recording Secretary*, George H. Hansell. *Corresponding Secretary*, Thomas Hogg. *Librarian*, John C. Hart. *Library Committee*, Jas. Knight, M. D., J. K. O'Keeffe. *Premium Committee*, John C. Hart, Wm. Fitzpatrick. *Fruit Committee*, Wm. S. Carpenter, William Cranstoun, John C. Hart. *Committee on Flowers and Plants*, William Cranstoun, Wm. J. Davidson, John C. Hart. *Committee on Vegetables*. Andrew Bridgeman, William Mitchell, Charles Ross. *Committee on Seeds*, D. L. Eigenbrodt, M. D., James Knight, M. D., Isaac Buchanan. *Finance Committee*, John Groshon, Charles Vandervoort, Edward Schell.

KEOKUK (IOWA) HORTICULTURAL SOCIETY.—*President*, A. Bridgeman. *Vice-President*, W. W. Belknap. *Secretary*, J. L. Tewksbury. *Treasurer*, S. A. Duke.

FRUIT-GROWERS' SOCIETY OF WESTERN NEW YORK.—*President*, Col. B. Hodge, Buffalo. *Vice-Presidents*, J. J. Thomas, Macedon; Wm. B. Smith, Syracuse; W. R. Coppock, Buffalo. *Treasurer*, W. P. Townsend, Lockport. *Secretary*, C. P. Bissell, Rochester.

GRAPE GROWERS' ASSOCIATION OF CONNECTICUT.—*President*, Daniel S. Dewey, Hartford. *Vice-Presidents*, C. S. Middlebrook, of Bridgeport; E. A. Holcomb, Granby. *Secretary*, M. C. Weld, Hartford. *Treasurer*, Richard H. Phelps, Windsor.

PORTLAND (MAINE) HORTICULTURAL SOCIETY, organized Nov., 1859.—*President*, T. C. Hersey. *Vice-Presidents*, Wm. Ellis, Geo. F. Shepley, Wm. P. Fessenden, John B. Brown, J. Jewitt. *Recording Secretary*, John W. Adam. *Corresponding Secretary*, John W. Dana. *Treasurer*, Abner Lowell. *Executive Committee*, T. C. Hersey, Abner Lowell, William Spanon, Geo. W. Woodman, John W. Adams. *For Establishing Premiums*, S. B. Beckett, Warren Sparrow, John Richardson, Moses G. Dow, D. H. Furbush. *Finance*, Wm. Moulton, Joshua Maxwell, Joseph Walker, Jr. *Library*, Darius Forbes, J. S. Palmer, Hosea Kendall. *Fruits*, Byron Greenough, Geo. Jewett, N. A. Foster, John Bell, Samuel Rolfe. *Plants and Flowers*, Rufus D. Bean, Geo. Barstow, John O. Wiley, Joseph A. Dirwauger, Geo. R. Davis. *Vegetables*, John F. Anderson, Jos. Bradford, J. H. Marian, Samuel Harkell, Jacob A. Dirwauger. *Ornamental Gardening*, Edward P. Weston.

ST. LOUIS HORTICULTURAL SOCIETY.—*President*, Wm. Glasgow, Jr. *Vice-Presidents*, W. C. Woodson, E. Mallinkrodt, John H. Tice. *Corresponding Secretary*, Carew Sanders. *Recording Secretary*, John McCurdy. *Treasurer*, Norman J. Colman.

KENTUCKY HORTICULTURAL SOCIETY.—Chartered by the Legislature. *President*, Thomas S. Kennedy. *Vice-Presidents*, Lawrence Young, Arthur Peter, Dr. J. A. Moore. *Treasurer*,

James Buchanan. *Recording Secretary*, Ormsby Hite. *Corresponding Secretaries*, Wm. D. Gallagher, Chas. A. Page. *Executive Committee*, A. G. Munn, C. C. Cary, Jos. Serb, Dr. Wm. Allen, J. W. Walker, H. S. Duncan, Ed. Wilson.

MISSOURI FRUIT GROWERS' ASSOCIATION.—*President*, Norman J. Colman. *Vice-Presidents*, Dr. A. W. McPherson, Prof. Geo. C. Swallow, Gen. M. Horner, Dr. McGuire, W. C. Price, E. Burden, John Dedrick. *Corresponding Secretary*, Dr. L. D. Morse, Allenton, Mo. *Recording Secretary*, Wm. Muir. *Treasurer*, Dr. C. W. Spalding.

MERAMEC (MO.) HORTICULTURAL SOCIETY.—*President*, Dr. A. W. McPherson. *Vice-President*, Charles Paffrath. *Corresponding Secretary*, Edward Vaughn, Allenton, Mo. *Recording Secretary*, Wm. Muir. *Treasurer*, Wm. Harris. *Standing Executive Committee*, Dr. L. D. Morse, T. R. Allen, Herman Stines.

NEW HAMPSHIRE STATE AGRICULTURAL SOCIETY.—*President*, Wm. F. Estes, of Dover. *Secretary*, Aaron Young, of Dover. *Treasurer*, Frederick Smyth, of Manchester. *Board of Directors*, Dana Woodman, of New Hampton; Joseph B. Walker, of Concord; Alfred Hoit, of Durham; John Preston, of New Ipswich; and John S. Walker, of Claremont.

STATE BOARD OF AGRICULTURE, (OHIO.)—*President*, Alexander Waddle. *Recording Secretary*, Hon. T. C. Jones. *Corresponding Secretary*, J. H. Klippart. *Treasurer*, John Reber. N. S. Townshend, J. M. Tremble, J. M. Millikin, D. E. Gardener, Wm. De Witt, H. B. Perkins, C. W. Potwin.

BATTLE CREEK (MICHIGAN) AGRICULTURAL SOCIETY.—*President*, Jeremiah Brown. *Treasurer*, John Meacham. *Secretary*, D. B. Burnham. There is also a Board of Directors.

FARMERS' AND MECHANICS' UNION INSTITUTE, AT BATTLE CREEK, MICHIGAN.—*President*, E. S. Lovell, Climax. *Treasurer*, V. P. Collier, Battle Creek. *Secretary*, D. B. Burnham, Battle Creek. There is also a Board of Directors and thirteen Vice-Presidents, whose names we have not received.

KENTUCKY STATE AGRICULTURAL SOCIETY.—*President*, L. J. Bradford, of Bracken county. First District: *Vice-President*, Philip Swigert, of Franklin. *Directors*, H. Thompson, of Clarke; O. H. Burbridge, of Bourbon; Wm. Warfield, of Fayette; Jos. Shawhan, of Harrison; Geo. L. Forman, of Mason. Second District: *Vice-President*, Dr. J. A. Tomlinson, of Mercer. *Directors*, G. Mallory, of Jefferson; Wm. A. Cook, of Mercer; W. C. Whittaker, of Shelby; T. S. Grundy, of Washington; Geo. Denny, of Garrard. Third District: *Vice-President*, A. Birdwell, of Livingston. *Directors*, Mr. Quigley, of Ballard; Geo. M. Priest, of Henderson; R. C. Harrold, of Union; David King, of Logan; W. B. Machen, of Lyon. *Treasurer*, J. W. Tate. *Corresponding Secretary*, W. D. Gallagher.

CHINA (MAINE) AGRICULTURAL SOCIETY.—*President*, A. H. Jones. *Vice-Presidents*, Alfred Marshall, Eli Jepson, Rollin Reed, William Percival, Caleb Jones. *Secretary*, S. F. Jepson. *Corresponding Secretary*, James P. Jones. *Treasurer*, Cyrenius K. Evans. *Executive Committee*, A. H. Jones, (ex-officio,) Caleb Hanson, J. S. Randall, Eli Jones, Jabez Lewis, Nathan Redlon, Jedediah Doe, Josiah H. Greeley, John L. Gray, Wm. Moshier, C. K. Evans, Wm. Crossman, Moody C. Burgess, Rollin Reed, D. C. Hanson.

The above Society has determined to hold meetings during the winter for the discussion of matters relating to agriculture. A most excellent move.

GREEN COUNTY (ILLINOIS) AGRICULTURAL SOCIETY.—*President*, Joseph F. Ballenger. *Vice-Presidents*, Samuel Armstrong, Jacob Bowman, Hiram Ellis, A. Potts, H. Van Arsdale. *Secretary*, Dr. O. Armstrong. *Assistant Secretary*, J. S. Vedder. *Treasurer*, J. E. Brace.

WOODBRIDGE AND BETHANY (CONN.) AGRICULTURAL SOCIETY.—*President*, J. W. Bradley, of Bethany. *Vice-Presidents*, D. Augur, of Woodbridge; Justus Peck, of Bethany. *Secretary and Treasurer*, Minott Augur, of Woodbridge. *Directors*, E. A. Tuttle, H. E. Lounsberry, M. W. Bradley, Bethany; U. Clinton, J. Sidney, Newton; S. P. Newton, of Woodbridge.

NEW HAVEN COUNTY (CONN.) AGRICULTURAL SOCIETY.—*President*, B. H. Andrews. *Vice-Presidents*, N. A. Bacon, S. P. Spencer. *Corresponding Secretary*, Washington Webb. *Recording Secretary*, Wm. B. Johnson. *Treasurer*, C. B. Whittlesey.

Correspondence.

DWARF PEARS FOR MARKET.—Will the editor of the HORTICULTURIST, or some of its correspondents, please answer the following questions?

1. Can dwarf pears be grown profitably for market?
2. If so, what are the best six varieties?
3. How far apart should they be set?
4. What kind of soil is best adapted to their cultivation?

By answering the above you will greatly oblige, yours respectfully,

A YOUNG POMOLOGIST.

[1. Yes, under favorable conditions of soil, selection of varieties, &c.

2. Bartlett, Duchesse d'Angoulême, Fondante d'Automne (Belle Lucrative), Beurré d'Anjou, Beurré Langlier, Beurré Diel. The above are fine and productive on the quince; but "A Young Pomologist" must remember that we do not recommend him to grow six varieties on the quince for market, unless he means to plant largely. If he will let us know more precisely what he intends doing, we can probably advise him better.

3. From ten to twelve feet.

4. A sandy loam of good body, well drained.

We have answered the questions of "A Young Pomologist;" but he will have much more to learn before he can grow the pear successfully on the quince. We shall very gladly afford him all the information in our power.—ED.]

MR. EDITOR:—I observed in the 8th month number of the HORTICULTURIST, an article recommending *useful* trees for lawns, &c.; and as the ideas then held out so fully agree with my own views, I feel inclined to give some of the results of my own practice during the past twelve years. I commenced my improvements by selecting a maple grove of six to eight acres as the site of my house. I removed the rough and large trees, reserving those of low heads and spreading branches, and as much as might be in groups. This was quite new in the West ten years back, the practice then being to cut everything down. But although I had some lofty Maples and spreading Beech, I lacked much to fill up. This I did with such forest trees as were not already growing on the premises, and evergreens and fruit-trees; and I now have growing twenty-one varieties of forest trees, ten distinct kinds of fruit-trees, and seven kinds of evergreens, not one of which I wish to spare; but expect annually to add, and that of fruit-trees. I consider some of my fruit-trees as symmetrical and ornamental as any in the lawn, to say nothing of the rich and luscious fruit. Two of my most admired trees are Black Tartarian and Napoleon Bigarreau Cherries, with their compact sugar-loaf heads and dark green leaves. What is a more lovely sight in early spring, than to see grouped here and there among the forest trees and evergreens in their varied bloom, the Cherry, Peach, Plum, Pear, Crab, (both cultivated and wild,) Hawthorn, Black Haw, &c. I am now adding, in remote

parts of my lawn, groups of Peach and Cherry; and expect to have fruit under the protection of the large Maples, when others have none, which has already occurred twice with me. And this is not all; I have not had a tree killed by the severity of our winters, in my lawn, while I lost three-fourths of my apple-trees which were by themselves and unprotected by forest trees. Although I am a great admirer of the Rose, and flowers generally, and have many beds, yet to see beds of well-trained dwarf pears and quince, loaded with golden fruit, (as I had the last season,) is at least charming to an amateur like myself. And I would say, plant useful, as well as forest and other ornamental trees, in your lawns, &c.

In conclusion, I will give the names of a few forest trees, which I would recommend, viz.: Tulip Poplar, Silver Poplar, Rock or Sugar Maple, the various kinds of Ash, Pine, Oak, Hickory, and Buttonwood; and the Beech, when we can get a good specimen, is beautiful. The Walnut I have discarded on account of the injurious effect it has on the other trees and shrubbery near it. I came near losing a fine Gov. Wood Cherry and a Pear by having them too near a large Black Walnut. I removed the Walnut, and they are reviving. For smaller growth, the Hawthorn, Crab, Red Bud, Dogwood, &c. The Black Haw is a favorite of mine. No Snowball is handsomer than mine are when in bloom, besides the clusters of Haws in autumn. The Burning Bush adds to a lawn in winter. Respectfully, B. S.

Forest Home, near Richmond, Ind.

[Mr. S. sent us, with his letter, a sketch of his Forest Home, which certainly presents a pleasing picture of good taste. There are some kinds of fruit-trees that are decidedly ornamental, and they may sometimes be introduced on lawns with the best effect. The fact that they are fruit-trees detracts nothing from their ornamental character.—ED.]

NOTE ON THE GARDEN OF A. BROWN, ESQ., NATCHEZ, MISS.—About the first of last June, on the route north up the Mississippi River, I stopped at Natchez to visit Mr. Andrew Brown, who had said that if I would call on him he would show me a fine garden. I did not expect to see anything extra, but was happily disappointed. It is situated under the hill, on the banks of the river; while the high bluff back of the garden is covered with native trees and shrubs. The part devoted to ornamental trees, shrubs, and flowers, contains about seven acres, at the farther end of which up the river is the residence of Mr. B. Near the entrance of the large gate on each side of the carriage-way, are two large green mounds, covered with Bermuda grass, which here makes a fine lawn. Each of these mounds is ascended by a spiral walk to the top, which is flat, with a live oak in the centre, beneath which is an iron settee, where one can sit and look at the river; and close beneath are crooked walks extending far among Magnolias, Camellias, and thousands of Roses, scattered amid a profusion of rare tropical plants and flowers. Evergreen arbors, and screens, and other mounds add to the scene, which certainly combines more beauty and has a greater variety than any other garden in the Southern States. It far exceeds the Hampden garden, at Columbia, S. C., or any in the vicinity of Charleston, S. C.

Many beautiful evergreens thrive in the climate of Natchez which cannot endure the winters of the Northern States. Mr. B. has a great abundance of the Magnolia grandiflora, the most beautiful of native evergreen trees. Some of his Magnolias begin to flower in early spring, and continue to bloom occasionally during the summer until early autumn.

I lingered about this charming spot during several days. As the sun one evening was about to set amid distant mountains of clouds, I ascended a retired mound near the bank of the river, and, seated alone on an iron settee, enjoyed the magnificent prospect of red, crimson, and golden mountains far away up the river, gilded by the departing sun. Finally, as I was about to retire, I thought, This is a very beautiful garden in a very beautiful site; yet it is far inferior to my Father's garden, which is variegated with lofty mountains and clear streams. Trees, great and small, and an infinite number of different shrubs and flowers are scattered over its hills

and dales. Gay birds sing there; and there the little squirrels play, while multitudes of animals sport and are happy amid its shades and dells. Old ocean dashes against its sides, nor are mighty waterfalls and clear lakes wanting to complete the scene. I love to wander in this garden, to study its trees and flowers, and I thank my Father who has given me a taste to enjoy the manifold scenes belonging to Him. Yes, all this vast and delightful variety is mine—mine to see, to admire, and to study; and may I ever be grateful to that good Parent, who has surrounded me with so many blessings. S. B. BUCKLEY, *Shreveport, La.*

A VOICE FROM KANSAS.—Every one must be wearied with the word Kansas; but not of her political troubles and strifes would I write; but of the woods and prairies as they present themselves to the emigrant's eye; and surely the indolent Indian has changed the aspect of the country but little since the formation of the world. But a few years ago this same Kansas was supposed to be almost a desert, with the exception of a few square miles; but instead we find the numerous streams heavily timbered with all the trees known to grow in temperate climates, and the prairies, like most meadows, decked all over with the various hues and colors that an artist can name. Here in the woods the Papaw bears its autumnal fruit, and some there are who say they prefer it to the most luscious peach. The Pecan-tree drops its nuts with the hickory and walnut, and the hazel-nut is gathered by the bushel, and almost every family make their own wine from the wild grapes, which grow here in such profusion that in flowering-time the fragrance of the flowers literally fills the air; and there are old vines in the woods one foot through at the base. Hops are also gathered in large quantities. The Black Raspberry, when transplanted from the woods to the garden, is twice the size I ever saw it in Ohio; and there are some blackberries growing in the woods that, could they but receive the attention that amateurs pay the New Rochelle, would equal that berry in productiveness and size. The Strawberry also in some places on the prairies grows in great profusion, but not here in the woods; and these Kansas prairies—not vast levels like the Illinois flats, but rolling, rolling, ever varying—and the roads,—what are plank roads by the side of these lawn drives? The first day of this last October found us travelling through the southern portion of this territory, where the climate is much milder than here; and as we drove through Lynn County, we were constantly breaking out into exclamations of delight as we caught sight of the patches of verbena by the wayside. By the side of the main travelled road over these prairies is a deserted old track, and in this old track is where this lovely verbena luxuriates—invariably a bright pink, and so sweet—has the fragrance of the old garden pink. I secured a number of the roots, for these "short-lived beauties" need no greenhouse to protect them. One root I found with flowers of a bright scarlet, but not fragrant. By the side of roads and on the commons in the little towns, where we usually see Mayweed, we see the little verbena, close to the ground, and flocks of sheep carelessly grazing all among them.

The Mimosa, or Sensitive Plant, grows luxuriantly. I gathered seeds from plants three feet high, with such exquisitely small delicate leaves. Many varieties of a species of China Aster decked out the green grass in patches of purple and white, and now and then by the wayside is to be seen a large dark blue-bell on a low stem, sometimes two or three in a cluster. All along shoot up tall stalks of a dark lilac-colored thistle-like flower—very pretty; and near little streams we found a light yellow flower with a black centre—leaf like the locust, and must be the garden senna. Twice I met with the Prickly Pear growing wild. A very little further south are several species of the Cactus, and the Trumpet Creeper clings to the bark of the forest trees while its orange-colored blossoms are nodding to you from the branches above. The valley of the Neosho is said to be the garden of Kansas: another year, if possible, I shall see its beauties with my own eyes. LOUISE.

[Very much obliged to you, Louise, for your interesting sketch; we shall be glad to hear from you again. We fear, however, that you did not look at your beautiful prairie flowers with your botanical glasses on. Look again. We cannot make out your post-office address.—ED.]

THE numerous friends of Mr. A. O. Moore will be glad to learn that he has arrived safely in California in improved health. From a letter just received from him we make the following interesting extract of his first impressions of the tropics. The letter is dated December 20. Mr. Moore will be our California correspondent.

"The trip hitherward was certainly a fortunate and pleasant one, having had but one storm, and that on the night we left New York. Scarcely a shower of rain have we seen since we started. As the climate grew rapidly warmer, we were soon on deck enjoying the soft warm breezes. And very strange it seemed to see women and children in summer clothes sitting all the evening on deck without a thought of taking cold. Then we landed at Aspinwall, and the first glimpse of cocoa and palm-trees—luxuriant growths of all kinds—(strange and beautiful were they all)—met our view, as we awoke on the morning of the eighth day from New York.

"After a stay of some eight or nine hours at Aspinwall, we took the cars for Panama, a ride I shall never forget. *Such forms of foliage!* As far above all types of foliage I ever saw as the forms that the old Greeks and Romans studied and copied were above our puling men and women of this day. Giant-like, yet all gracefulness; the very ideal of all that is beautiful, luxuriant, and noble.

"We embarked again that evening on the steamer "Golden Age," leaving unvisited the city of Panama proper, which is an old walled Spanish town near the dépôt. Twelve days' sail on the placid Pacific brought us to San Francisco,—a very quick and pleasant trip.

"Here the weather is delightful. Though no hour of the day is comfortable within doors without a fire, yet when one remembers that we are in mid-winter, and calls to mind the snows and icy cold of the same latitude on the Atlantic, this must be admitted.

"All the roses and other flowers are in full bloom. The usual spring and summer vegetables, and even strawberries, are in the market, and a large part of the day it is pleasant to be out sketching in the open air."

Editor's Drawer.

AMERICAN STRAWBERRIES IN ENGLAND—RETURNING THE COMPLIMENT.—The following extract from Turner's Florist will show in what estimation American Strawberries are held in England, at least by some parties. The *animus* of the article will find a ready explanation in the indiscriminate denunciation of English Strawberries by some writers in the United States. The whole thing reminds us of the old proverb, that "Spanish chickens will come home to roost." The writer has fallen into several errors, from which a little more reading and experience would have saved him.—ED.

"Are American Strawberries worth growing? is a question often asked of us, and doubtless it is a question likely to interest many of our readers, more especially now that the Strawberry is a fruit of especial notice, which is manifest by the number of seedlings continually coming before the public.

"There are now a great many varieties of American origin, and we may suppose that nine-tenths are worthless, judging from those we have grown, such as Hovey's Seedling, Ross's Phœnix, &c., which are considered by all American pomologists to be among the best in their collections. Now, those varieties are quite inferior to our class of Pine Strawberries; and Mr. Rivers, who is a good authority on the subject, having imported and proved a great many varieties of American fruit, says of the Strawberries, that they 'do not seem to be adapted to our climate,' and 'the best of them is Hovey's Seedling, which grows most vigorously, but is a shy bearer, and of a brisk, agreeable flavor, but not at all rich.' And Downing, in a work on American fruit, says, 'that Hovey's Seedling is undoubtedly the finest of all varieties for this

country, and is well known throughout all the States, and has everywhere proved superior for all general purposes to any other large-fruited kind.' Although we have not grown or heard of an extraordinary American Strawberry finding its way across the Atlantic, it is no reason why a good one should not some day come forth, that is, when they have passed through many stages of improvement like our own; for, in all probability, our original stock, from whence all our present excellent varieties sprang, were natives of America, viz., the Old Scarlet and Carolina.

"The Americans admit that some of the European varieties are superior to their own in size and flavor; still they say, 'It is impossible to cultivate them with success, and that every recommendation of these foreign hermaphrodites, as productive and valuable for market purposes, is a *gross imposition.*' They are also termed *fancy* varieties, and Dr. Bayne, who is said to be a 'highly intelligent cultivator,' says, 'All English varieties have proved with me *worthless trash.*' Now, I think, we may return the compliment with a good grace; the only difference is, that we could grow the American varieties in this country perhaps better than they can themselves, only for this simple reason, that they are not worth growing in comparison with our own kinds.

"It seems evident that the climate of the States is not well suited to the successful cultivation of the Strawberry, and that none of our fine European varieties thrive so well as their own inferior strain of seedlings, which are mostly of the Old Scarlet class, and which nearly every grower in this country has ceased to cultivate, to give place to other kinds of superior merit.

"Lately we have received a descriptive catalogue of American Strawberries grown by W. R. Prince & Co., of Long Island, N.Y., which enumerates 153 varieties, among which number, 63 named kinds, and said to be *splendid*, are their own seedlings, and sent out by themselves; now if all are as good as they are represented, we may suppose them to be the most successful raisers of Strawberries in the world; and in all, their catalogue contains 109 varieties of American origin, and mostly all the European kinds are rejected, among which are all *Myatt's seedlings;* and, when we find that Nicholson's May Queen is described as of fine flavor, Omar Pacha very large and beautiful, and Sir C. Napier as a late kind, we cannot place much confidence in their display of judgment, or the correctness of the description of other kinds.

"We have also before us a circular respecting a new Strawberry, named Downer's Prolific Seedling, from J. S. Downer, a nurseryman near Elkton, Todd County, Ky. This wonderful Strawberry is reported to be 'ten times as productive as any of the 100 varieties cultivated in that vicinity, averaging 123 berries to each single plant,' and of course, in size and flavor, equal to any other variety in cultivation, and not to be sent out till 25,000 plants are ordered; so Mr. Downer intends, if possible, to be on the safe side, as it is coming out at a very high price; and all who may think fit to favor Mr. Downer with an order will have to pay about £7 for 100 plants.

"We must leave our readers to judge for themselves whether it is all gospel that our American friends set forth; as for ourselves, we think no American variety would improve our present collection."—J. P., *in Florist.*

THE PEA BUG (*Bauchus prisi*).—Professor J. P. Kirtland gives, in the *Ohio Farmer*, the results of some experiments made with chloroform, with a view of destroying the larvæ of the pea bug. He says:

"The eggs of that insect are deposited in the pea while it is yet young and tender. About the period when the pods become dry, the young larvæ are hatched, and commence depredating on the cotyledon of that vegetable. That is the moment to be improved for arresting the progress of the evil.

"The seeds should be shelled from the pods, and placed in a suitable bottle, closed vessel, or box. On them should be sprinkled a few drops of chloroform, which should be extensively shaken. This should then be corked, and every specimen of insect within it will probably be destroyed in twenty minutes' time; but, to render the process perfectly successful, it is well to

continue the peas in their inclosure for twenty-four hours, or longer. Seed peas thus treated, will show, on examination, a mere speck at the point, occupied by the young worm. But the advantages of this process will be most observable when the plants from these seed peas make their growth next season. They will be far more vigorous and healthy than those starting from seeds which have been extensively excavated by that depredator. By this method we can annually preserve the seeds, and perpetuate the cultivation of the fine varieties of this vegetable, in this vicinity, without resorting to foreign importations."

THE EPACRIS.—With the object of refreshing the memories of amateurs on the importance they generally attach to a supply of winter-blooming plants, both for cutting and for the decoration of greenhouses and sitting-rooms, I send you a few remarks on the culture of the Epacris, thinking that for the many purposes that such plants are required there are few to surpass it in the gayety of its colors; the succession of bloom, too, that may be obtained from a good selection is not the least of its recommendations.

The propagation of the Epacris is readily effected, in the month of May or June, by selecting shoots of the current year's growth, stripping off the leaves from the lower part, and cutting the bottom evenly. They are then inserted half an inch deep, in prepared pots, filled with sandy peat over a good drainage. The whole should be firmly pressed, and after the cuttings are inserted should receive a gentle watering from a fine-rose watering-pot. The pots must then be covered with a bell-glass, and placed in a cold frame or pit, where they must be duly attended with water and shaded from the sun. In a month or six weeks it will be found that the cuttings have become "callused," or a ring of white cellular tissue will have formed on the margin of the cuts. When this is the case the "strike" may be considered safe, and the cuttings may then be removed to a warmer situation, such as the shaded part of an intermediate stove; here they will almost immediately push out roots, and the tops will begin to elongate. At this stage the bell-glasses must be removed, and in a short time the points of the cuttings taken off, and, if a scarce variety, again inserted, and treated as before. In a short time numerous buds will be formed at the axils of the leaves; they should then be potted singly in small pots. By keeping them somewhat close, in a cold pit or frame, they will soon commence to grow freely, and will continue to do so till late in the autumn. In winter little attention will be required, further than to keep the plants from the frost, with an occasional watering, and plenty of air during mild weather.

In order to give as long a season as possible, the young plants should be examined early in February, transferring such as require it to larger pots, and placing them in a growing temperature of about forty-five to fifty degrees. By this means the plants will make an early growth, and will require repotting early in the season, or about April. As the plants grow attention must be paid to stopping the strong growths early in the spring, as by this means a bushy compact habit is obtained, and the plants will be more compact and handsome. Shading will be required from the early part of March, in bright weather, till the middle of June. By this time, if all has gone on well, the plants will have made sufficient growth for the season; and should then be removed from the frame to the open air; if the pots can be plunged in coal ashes they may be fully exposed to the sun, and must be attentively supplied with water. No plant suffers more than the Epacris when stinted in its supply of water, and if flagging is allowed death is almost certain.

Exposed as above the plants become browned and unsightly; by this, however, they are benefited, as the wood being thoroughly matured flowers will be more abundantly produced. Early in September the plants must again be removed under glass, and wintered as before recommended; and as little bloom may this season be expected, it will be better to cut back to within three or four inches of their base all the strongest shoots of the former year's growth early in February; the plants may then be kept somewhat warmer for a week or two, when they

must be carefully potted and placed in a growing temperature. The treatment this season will differ from the last, inasmuch as they will not require repotting, and only the strongest of the growths need be pinched, and these not later than April. If they are required early in bloom, a light situation in the greenhouse must be selected, and the plants removed early in September from the open air.

By starting the plants early into growth they will acquire the habit of early flowering, which will in most instances enhance their value. In the dull months of early winter their varied colors look conspicuous and attractive, which is not the case to so great an extent when the more gaudy colors of "forced plants" begin to abound.—S., *in the Florist.*

A Migratory Rose.—Strange as this heading may appear to the reader, the flower is nevertheless an entity—a thing that exists, and may be handled; a plant almost as regular as the swallow in its flittings to and fro; one that travels many miles annually; and, what is more, a fashionable one—resorting to the sea-side during the hottest season, to indulge in a swim among the cool billows of the Mediterranean. The name of this remarkable vegetable phenomenon is *Anastatica hierochuntina* among the botanists; the *Rose of Jericho* with the unlearned.

Very many superstitions are connected with this extraordinary plant in the minds of Bedouins and other Arab tribes. The ancients attributed miraculous virtues to the Rose of Jericho. Dispensing with the notions of both, however, there remains to us quite a sufficient charm about this apparently insignificant shrub, which seldom attains six inches in height, to apologize for introducing the subject to our readers.

To behold this little rose, it is not necessary to tell you "to go to Jericho;" no such uncomplimentary journey is required. In the arid wastes of Egypt, by the borders of the Gaza desert, in Arabia's wilderness of sands, on the roofs of houses and among rubbish in Syria, abundant specimens are to be met with. But, like many other things of insignificant exterior, few pause to look upon or handle this wayside shrub, which nevertheless carries with it a lesson and a moral.

By the laws of *germination*, there are, we are told, these three things necessary for a plant—humidity, heat, and oxygenized air. The first of them is indispensable, inasmuch as without it the grain or seed would not swell, and without swelling, could not burst its shell or skin; and heat, in union with water, brings various gases to young plants—especially oxygen—which are necessary for its existence.

With these facts before us, and a knowledge that rain seldom falls in most places where the Rose of Jericho thrives, how are we to account for the extraordinary circumstance of this plant being periodically abundant and flowering at precisely the same season year after year, when, by the acknowledged laws of germination, there has been that succor wanting which is indispensable to propagate vegetation? Now appears the most remarkable and most direct interposition of nature for her offspring—an interposition little short of miraculous, and, indeed, apparently so fabulous as to be unworthy of record. But the fact has been established beyond doubt that, for its own purposes, this little plant performs annual journeys over a large extent of country, and into the ocean, whence, at a stated period, it, or rather its offspring, returns to the original haunts, takes root, thrives, and blossoms.

In the height of spring, when nature casts her brilliant vesture, set with flowers and flowerets of a hundred varied hues, over the fertile valleys and hills of Syria and part of Palestine; when every breeze is laden with rich incense from orange groves or honeysuckle dells, then, unheeded, amid the rich profusion of vegetation, or isolated amid the desert sands, blossoms the tiny Rose of Jericho. On house-tops, where the sun's fierce rays rend crevices—on dust-heaps, where half-starved wretched curs prowl and dig for food or a resting-place—where multitudes throng the streets, and where neither foot of man nor beast has ever left imprint on the broiling sand, there sprouts the wonderful *Anastatica hierochuntina*. When summer has

fairly set in, and flowering shrubs have ceased to blossom—about the same season of the year that Mr. Brown and his family are meditating a month's trip to the sea-side for fresh breezes and sea-bathing, when the whole house is turned top-sy-turvy in the pleasurable excitement of packing for the month's holiday—the Rose of Jericho begins to show symptoms of a migratory disposition also. How astonished Mr. Brown would be if his gardener rushed in with the startling intelligence that some favorite rose-bush or other plant in the garden had evinced signs of restlessness, and, after a few preliminary efforts, had quietly taken itself off for the season!

Hadji Ismail, the Bedouin camel-driver, who witnesses this phenomenon annually, encountering scores of migratory *Anastatica hierochuntina*, simply pauses to stroke his prolific beard and fresh charge his pipe, while he pours into the eager ears of some untravelled novice legends about this wonderful rose—legends replete with fairy romance, in which almost invariably a certain unmentionable gentleman comes in for a volley of invectives, as being the instigator of this mysterious freak of nature.

The first symptom the Rose of Jericho gives of an approaching tour is the shedding of all her leaves; the branches then collapse, apparently wither, and roll themselves firmly into the shape of a ball. Like the fairies that travelled in nut-shells, this plant ensconces itself in its own framework of a convenient shape, size, and weight for undertaking the necessary journey. Not long has the flower assumed this shape when strong land-breezes sweep over the land, blowing hot and fiercely towards the ocean. In their onward course, these land-winds uproot and carry with them the bulbs or framework of our rose; and, once uprooted, these are tossed and blown over many and many a dreary mile of desert sand, till they are finally whirled up into the air, and swept over the coast into the ocean.

Soon after the little plant comes into contact with the water, it unpacks again, unfolds itself, expands its branches, and expels its seeds from the seed-vessels. Then the mother-plant finishes her career, or is stranded a wreck upon the sea-beach. However this may be, it seems evident that the seeds, after having been thoroughly saturated with water, are brought back by the waves, and cast high and dry upon the beach. When the westerly winds set in with violence from the sea, they carry these seeds back with them, scattering them far and wide over the desert, and among inhabited lands; and so surely as the spring-time comes round will the desolate borders of the desert be enlivened by the tiny blossoms of the Rose of Jericho.—*Chambers' Journal.*

Neapolitan Violets.—When sheltered and protected from severe weather these violets are disposed to produce their blossoms through the whole winter. The treatment required, to enable them to do this in perfection, is as follows: A compost of half turfy loam that has been turned over two or three times during the summer, and one half rotten dung, should be well mixed together and ready for use by the end of September. At that time the violet plants must be raised from the bed in which they have been growing during the summer with as much earth to their roots as possible. They should then be divested of all their side shoots or runners. The proper sized pots for them are seven-inch ones. One strong plant should be put in each pot; but when they are weak, two or three, according to their size, may be put together so as to look like a single plant. The pots should be well drained; and if this is done with broken bones instead of potsherds, so much the better; for the roots of the violets lay hold of the bones, which give vigor to the plants and make them bloom more profusely.

Having potted as many as are necessary for the season, a good supply of water should be given to settle the soil well about the roots. A sufficient number of old melon boxes with the lights belonging to them should be arranged in a southern aspect, placing the boxes in such a manner that the lights will throw off rain quickly and thereby prevent drip, which in winter not only has a tendency to rot the plants, but also causes the flowers to be produced sparingly. The frames being placed in position, a layer of old tan should be put into them four inches thick: in this the pots should be plunged up to their rims, beginning at the back of the frame and

arranging them in rows in succession till the frame is filled. It will be necessary to leave three inches space between the pots where the plants are large, that air may be permitted to pass freely between them, and thus keep off damp, which when it prevails is apt to destroy the plants. If, however, they are so small as not to cover the tops of the pots, then the latter may be placed closer together.

When all has been completed let the lights be put on. When the temperature is above 50° the lights may be removed entirely during the day-time, and at night they should be tilted up at the back for the admission of air. When the temperature of the air outside is below 50° the lights should be left on; but even then air should be admitted behind in the day-time. When the temperature is below 40° the admission of air should be very partial, if it be admitted at all. At no time after the plants begin to bloom should the lights be entirely removed, except for the purpose of watering and cleaning the plants, and of gathering the flowers. When the weather is cold and likely to be frosty, coverings of mats should be applied at nights, making the thickness of the covering in proportion to the severity of the weather. In hard frost two mats should be put on as well as litter. The earth in the pots must never be allowed to freeze if it is possible to prevent it. The coverings must be removed in fine days. In March and April as much air as possible should be given if the weather is fine.

The pots should be examined frequently at all times when the weather will permit. Weeds and decayed leaves must be cleared away, and a little water given when the soil is dry. Care must, however, be taken to wet the leaves as little as possible during the winter, moisture being injurious to them at that season. In March and April, if the plants have been properly managed, they will then produce abundance of flowers, and consequently will require more moisture than during winter.

When the plants have done flowering they may be turned out of their pots and divided, some into five or six, others in two or three, and some not all; for if made too small they will not be sufficiently strong by the time they are wanted for potting in autumn. When divided, they should be planted out like strawberry runners, a foot apart, in rich ground under a north wall. The plants should be kept clear of weeds during summer, and watered only in dry weather. It is necessary that more than double the number of plants which may be wanted in autumn should be planted in spring to allow of a selection of the best for potting.

By following the system of culture just described violets may be had from Christmas till April. One thing which the plants seem to be very fond of is broken bones and bone-dust. By a liberal use of these I have found my crops of flowers to be more abundant than when no such assistance was given.—*M., in Cottage Gardener.*

Seedling Apricots.—The generality of Apricots formerly cultivated had bitter kernels, the Breda and Turkey forming the only exceptions worthy of notice. But besides the two just named, there must now be included in the class of sweet-kernelled Apricots the Musch-Musch, originally from the oases of Upper Egypt, the Syrian Apricot Kaisha, and we believe some others introduced into this country by the late Mr. Barker, of Suedia. We have now to add another, a seedling raised by M. de Jonghe, of Brussels, who has kindly sent us a branch of it about 3 feet in length from a tree growing as a standard. On this length of branch we counted *upwards of six dozen fruits*, notwithstanding the unfavorable spring. There can, therefore, be no question as to the productiveness of the variety. The fruit so crowded could not of course be large, but f properly thinned, it would have probably equalled in size the Breda, which it also resembles in form. The skin is brownish-orange; the flesh is deep orange, parting freely from the stone, exceedingly juicy and rich. The stone is small, roundish, and contains a sweet kernel. The fruit is excellent for the dessert, and makes, we can add, a rich preserve.

Specimens of another seedling were received with the above, but not at all to be compared with it in point of flavor; the flesh was not so juicy; kernel bitter.—R. T., *in Gard. Chronicle.*



1. ÆGERIA EXITIOSA. FEMALE. 2. MALE. 3. FOLLICLE. 4. PUPA CASE.
5. TOMICUS LIMINARIS, NATURAL SIZE. 6. MAGNIFIED. 7. PEDUNCLE.

for THE HORTICULTURIST

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Dwarf Pears—More About Deep Planting.



WE did not intend to recur so soon again to the subject of Dwarf Pears, but are moved to do so at the urgent request of some of our readers, who desire further information in regard to some points alluded to in our former article. That article has, so far as we have heard, with but two exceptions, been mostly understood as we intended it. We related the results of our own experience and observation, and dealt with a present and real evil, and not with a past or imaginary one. We believe that Messrs. Wilder and Barry, and other intelligent pomologists, will agree with us essentially on the subject of deep planting; and yet we have seen Dwarf Pears planted eighteen inches deep, and Mr. Wilder quoted as authority for doing it. We do not wish to be understood as referring to a solitary instance: within even the past two or three years we have seen multitudes of cases where Dwarf Pears have been planted from ten to eighteen inches deep, not alone by the untaught amateur, but in some cases by professed gardeners. Mr. Wilder, of course, would repudiate such planting, and we have done it for him in more instances than one. It may be asked whether the language of Mr. Wilder and others can fairly be said to recommend such planting. Taking all the facts into consideration, we are bound in candor to say that it can; and yet we feel very confident that neither Mr. Wilder, nor Mr. Barry, nor any other experienced pomologist, would recommend planting trees from ten to eighteen inches deep. How, then, has this malpractice arisen? Either from ignoring or not knowing the fact, that some nurserymen work the Dwarf Pear so high, that failure must inevitably ensue, in a majority of cases, if such trees are planted up to the junction of the quince and the pear. Now, when we state that trees are so worked, we state a fact within our personal knowledge; hundreds of such trees are annually sold in and around New York, and hundreds more are hawked all over the country. We are dealing with facts, and wish to do our mite to correct what we believe to be an increasing evil. We know very well that most of our leading and intelligent nurserymen now work their Dwarf Pears about right; we believe that they will be among the last to question the propriety of condemning what we know to be a pretty wide-spread evil, and among the most fruitful of failure in the cultivation of the Dwarf Pear.

In deep planting, as we have defined it, the chances of success are lessened with the age of the tree. If what is called a "maiden tree," or a tree one year from the bud, the chances that it will reëstablish a normal condition of its roots by throwing out a new system nearer the surface, are much greater than when the tree is older; with an increase of age, the chances become less: the bottom of the quince stock will inevitably rot away, and the pear become more or less diseased. The evil may sometimes be remedied at once in young trees by cutting off several inches from the bottom of the quince, or it may be gradually overcome by lifting the tree annually for a few years, cutting away a portion of the stock, and replant-

ing a little deeper ; and this we have done in a few cases with comparative success ; but it is a work of supererogation which few will undertake, and none ought to be required to do, for a tree ought to be in proper condition for planting before it is put in the ground.

One of our readers thinks we have not been explicit enough in regard to the height at which Dwarf Pears ought to be worked. Five inches we consider to be the maximum ; every inch lower than that we esteem a point gained. No man will plant a Dwarf Pear deeper than five inches on any recommendation of ours ; and if the tree were more than three years old, we should hesitate to plant as deep as that. If everything has been well done, a tree stands in the nursery, in reference to the position of its roots, in the best condition to insure its healthy growth. If it be worked five inches from the ground, and, on being transplanted, the point at which it is worked be buried in the soil, it must stand at least six inches lower than it stood before, which we conceive to be, in precise terms, six inches removed from a normal condition, or that condition which is best calculated to insure its longevity, fruitfulness, and health.

Our opinion is asked in regard to leaving the quince stock above ground. We prefer, when it can be done with safety to the health of the tree, to cover the junction of the quince and pear about an inch at the time of planting. The pear will throw out roots, the tree will be larger and more vigorous, and, we think, longer lived. Notwithstanding, we know of productive and thrifty Dwarf Pears with a foot and more of quince stock above ground ; indeed, we have seen quince-trees worked all over with pears like a standard rose. The first plan, however, will in the end give the most satisfactory results. In some localities the borer presents a strong objection to the exposure of any portion of the quince ; the remedy for this will be treated of hereafter.

The old Pear-grower will read the above remarks, and pass on with a smile, or any other good-natured thing he likes ; but the novice, whom we wish to interest, will do wisely to read and ponder them well.

A HOME IN THE COUNTRY.—No. II.

BY M., SOUTH ORANGE, N. J.

(Continued from p. 63.)

We now come to the arranging and preparing the ornamental grounds, adopting the style which has been termed beautiful. A most prominent feature, which may be said to belong to this style, is the *lawn*. The picturesque style hardly admits any lawn, or at best does not make much of it, while the geometrical style scarcely rises to the dignity of anything more than mere grass plots.

The best way to prepare a lawn, and, for that matter, any ground designed for cultivation, is to trench it deeply, disintegrating and stirring the soil very thoroughly. The object of this is not only to afford the roots of grass, trees, and shrubs opportunity to wander freely in search of nutriment, but also to allow the air and rain to penetrate easily, carrying fertility with them. Every shower brings down food for the roots of plants,—actual manure. Falling upon hard, compact ground, the water flows over

the surface instead of through the soil, and so carries its rich material with it instead of depositing it for the roots of plants to feed upon. The air, also, is rich in fertilizing material. In well-trenched ground the roots penetrate to a greater depth, and so are better able to sustain their tops against drought. A trenched lawn, therefore, will retain its vigorous green color through dry times which will singe with brown one not thus prepared. Trees planted in such soil will far outstrip in growth those which have not this advantage, so that it is better economy to go to the expense of thorough preparation of the ground than to pay extra prices for large trees. Digging large holes when planting trees does not answer the purpose fully, and, indeed, is a positive disadvantage when the subsoil is tight, inasmuch as these holes act as wells for the surface water, keeping the roots too wet, and causing them to rot. Besides, the roots soon reach the hard soil at the sides of the hole, and their progress is checked. It is well to remember, that if you set out to trench the ground to a depth of two feet, you will probably really accomplish fifteen to eighteen inches ; if you start for eighteen inches, you will be likely to reach twelve to fifteen. When you hear one talk of having trenched his ground to any certain depth, you are generally safe in making a quarter or third allowance, unless he happens to be a very careful man who talks, and works, too, "by the rule." A word of caution as to the manner of trenching. The general recommendation is, either to bring the subsoil to the top, or to mix it thoroughly with the upper soil. These may be the best ways in some soils, but where the subsoil is as poor as it commonly is in the Eastern States, either of these methods is likely to lead to disappointment, unless, indeed, very extraordinary means are used to fertilize the barren soil thus brought into use. If the fertile soil on top be mixed with an equal quantity of barren soil, it is evident that the product possesses, proportionately, only half as much fertility as was in the top soil before. Time and manure will undoubtedly bring the top soil again to full fertility, and when this is done, the soil has been deepened and thus greatly improved ; but it will take years to accomplish this in an ordinary way. If immediate results are looked for, my own experience is, that it is greatly better to leave the subsoil at the bottom, and the top soil at the top, taking care, however, that both are well stirred up.

If willing to go to the expense of under-draining as well as trenching your lawn, so much the better ; and here I have reference to land which is not naturally wet. Wet spots must be under-drained, of course. *All* lands, except those which have subsoils through which water readily penetrates, are benefited by under-draining.

Your land being trenched and under-drained, if you have the patience to cultivate it several years in hoed crops, manuring richly, cultivating cleanly, stirring the ground so often and so thoroughly that the weeds have no chance to show their heads, you are doing the very best thing, and may expect corresponding results. Few are content to live in a potato patch so long, however ; and it is not absolutely necessary. By frequent cutting, rolling, and top-dressing, the grass can be made to drive out most weeds in a few years. Before grass seed is sown, the surface should be regulated. By this it is not meant that you should make a dead level of your lawn, or throw it up into terraces or mounds. Varieties of surface,—hills, valleys, ravines,—are valuable features, to be carefully preserved, and sometimes even created where they do not naturally exist ; though altering the surface

of ground by building hills and digging valleys is an arduous undertaking. One gets some idea of what a vast quantity of material it must take to make the earth when he undertakes to alter the form of a very small spot on its face. A thousand cart-loads of soil deposited on a level surface will make but a small hillock. Yet, on the other hand, a little labor, judiciously expended, will accomplish very much toward rendering graceful the surface of a lawn which has not naturally this beauty.

Before proceeding in our subject to the laying out walks and roads, the arrangement of trees, shrubs, and other objects of interest or usefulness, it may be well to consider for a moment what we are seeking to produce. "A home in the country" is our subject and object. Now the chief external requisites of a home are comfort and convenience. Beauty is *very* desirable, but is secondary, after all. Fortunately, usefulness and beauty are so closely allied that the latter does not always, or even often, have to be sacrificed to the former. One of the highest beauties in a country place is an air of ease and comfort. If inconvenient, unenjoyable in the circumstances of every-day life, a country place cannot, to my eye, be beautiful. It may make a fine picture, but must be an unattractive home. Landscape gardeners sometimes forget this, and, in their eagerness to produce artistic effects, sacrifice comfort and convenience. Convenience and beauty are the ends to be sought, and each may accommodate the other a little, but if either must give way decidedly, let it be the latter, say I. If convenience suffers, beauty will suffer with it.

Each road and walk, then, should appear to have a definite purpose, and to accomplish that purpose in a simple, direct manner. The keeping in mind this guiding principle will be a great assistance in locating walks and roads. Thus, the approach to the house should be an easy, ready way, apparently the *easiest* way by which a road could be made from the highway to the entrance to the house. There is a sameness, stiffness, and awkwardness about straight lines, (nature uses them very sparingly,) and therefore these are to be avoided in both walks and roads; yet it will not do to make a curve in a road for the sake of a curve. There must be some reason for it, or else your approach will not seem to accomplish its purpose in the simplest, best manner, and so will be unsatisfactory. The object of the approach to the house is to lead to the house. Some attractive object may draw it slightly from the most direct line, but not too much, for all other objects must be subservient to the one main object. It is not in any measure losing sight of this main object to turn aside to overcome natural obstacles. Thus it is allowable to make a very decided curve to get around a lake; a group of trees is a sufficient excuse for deviating from a direct course. Yet this group must appear natural, or it does not form a good excuse. It is easier to go around a hill than over it; therefore a hill forms a satisfactory reason for a curve.

Keeping in mind the guiding principle, it is evident that our walks must lead *from somewhere to somewhere.* Strange as it may seem, there are many walks which do not accomplish this, but seem to have been made with the mere purpose of making walks. The house being the principal "somewhere" about the place, it follows that it must be the centre from which the walks mainly diverge. They should lead to the various points of interest about the place, and from one of these points to another. Parallel walks are not in good taste, nor should one walk leave another at right

angles. Either of these arrangements is stiff and ungraceful. Walks are better not less than five feet in width, and the entrance-road seventeen. These widths may seem too great for small places, but less widths are inconvenient and give a contracted appearance.

In making roads and walks, the most essential thing is to secure good drainage. If this be thoroughly done, they will be good, whatever the material used in their construction. If you wish to proceed in the very best manner, first remove entirely the surface soil from them ; then lay drains of tiles or stones in the centres of the walks and at each side of the roads, placing them deep enough to escape frost, and providing suitable outlets for the water ; now fill in with stones, putting the smaller ones on top, and finish off with just enough gravel to cover the stones, and your walks are as good as I know how to make them. The surface is best arranged much in the shape of an almost flat roof, sloping to both sides. The object of making roads and walks in any other form than a perfect level is, that the water which falls upon them may be carried off quickly and effectively. If the outline from side to side is a regular curve, the centre is almost flat, while the sides have greater inclination than is necessary. A uniform grade from the centre to each side is the best form, though difficult to preserve.

A few thoughts upon ornamental planting, the arrangement of trees, shrubs, and flowers, may come in the next number.

POT CULTURE OF GRAPES.

BY WILLIAM SAUNDERS, GERMANTOWN, PA.

We doubt whether the culture of grapes in pots will ever become popular or general, as it is a costly mode of producing fruit. It is true that, under a given surface of glass, as much fruit may be raised from vines in pots as from the best established and permanent plants ; but then, allowance must be made for the previous preparatory growth of the pot vines, as they require to be grown under glass for two seasons before fruiting, and during the second year they will occupy as much space as when in fruit. Two houses, therefore, are required to get one crop ; and when we take into consideration the amount of time and labor required in potting, watering, and general management, it will be found that the cost of production is more than double that of border vines ; and even to insure these results it is necessary to prepare a new set of fruiting plants yearly ; for although it is perfectly practicable to take a crop yearly from the same plants even in pots, yet the crop is so small that it will not repay labor, and, so far as comparative economy is considered, more will be realized by fruiting young, well-prepared plants, even at the expense of a second house, the increase in the crop more than remunerating the increased expense. A thorough trial of these methods has led to this conviction. The labor and constant watchfulness inseparable from pot culture in a climate so varied and intense in its extremes as ours, may ultimately lead us to adopt a modification of the system, combining all its advantages on much more economical principles.

The principal object attained by growing fruit trees in pots is the entire

control which the cultivator has over the root growth; and with reference to forcing into fruit before the natural season, there is a very great advantage in having the soil into which the plants are growing, surrounded by the same temperature in which the branches are exposed; for when the branches of a plant are stimulated by a greater degree of heat than that influencing the roots, a species of exhaustion ensues highly detrimental to growth.

With reference to complete isolation from external influences, it is evident that the same conditions may be secured by preparing a small border inside the house, and planting out the vines with a view to permanence. In other words, plant a number of vines in a large pot, instead of placing them separately in more contracted spaces; for a border placed in this position is as much dependent upon the care of the cultivator as the pot, with the additional advantage of being better guarded against extremes either of heat, drought, or moisture. The border once prepared will require little further care, and the plants will produce good crops yearly without the constant renewal demanded by exclusive pot culture.

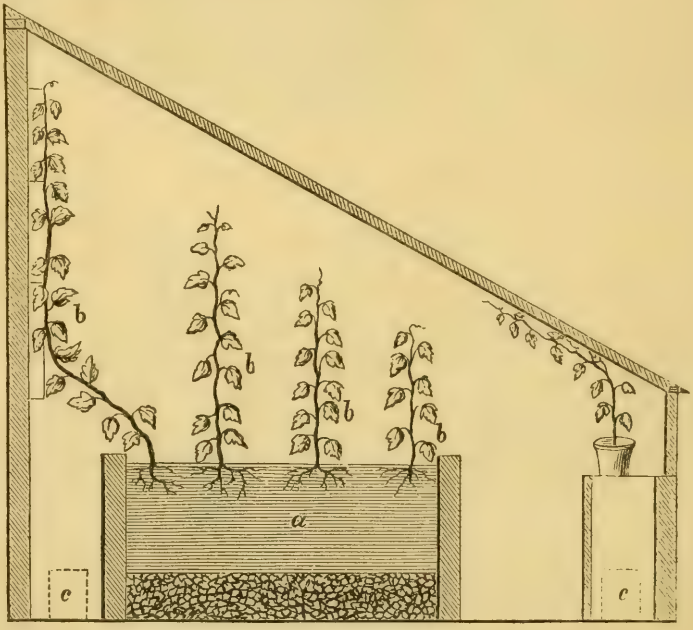


Fig. 1.

The accompanying sketch is introduced, the better to illustrate the above system. It will be observed that the soil in the pit *a*, Fig. 1, is wholly inside the house and completely isolated from the walls, so that it is surrounded by the same temperature as the branches. The soil is placed upon a stratum of drainage; oyster shells, brick, rubbish, and such like will answer well for this purpose, and insure porosity and dryness when required. The arrangements of the plants *b* will be understood from the section and ground plan, Fig. 2. The position of the heating apparatus is

indicated at *c*. Large-sized draining tiles or flues built with brick, pigeon-hole fashion, for the admission of air and heat into the soil, should be placed across the bottom of the border through the drainage, as shown at the dotted lines *d*. These may be placed six or eight feet apart, and left open at the ends, that the air may more effectually permeate the soil ; by this means the soil will be kept at a suitable temperature, if ordinary care is exercised in the application of water. The drainage will always prevent anything like stagnation of water, but in the early stages of growth the soil should be kept rather dry, which will increase its temperature. During active growth, water will be required more freely, and increased vigor may be

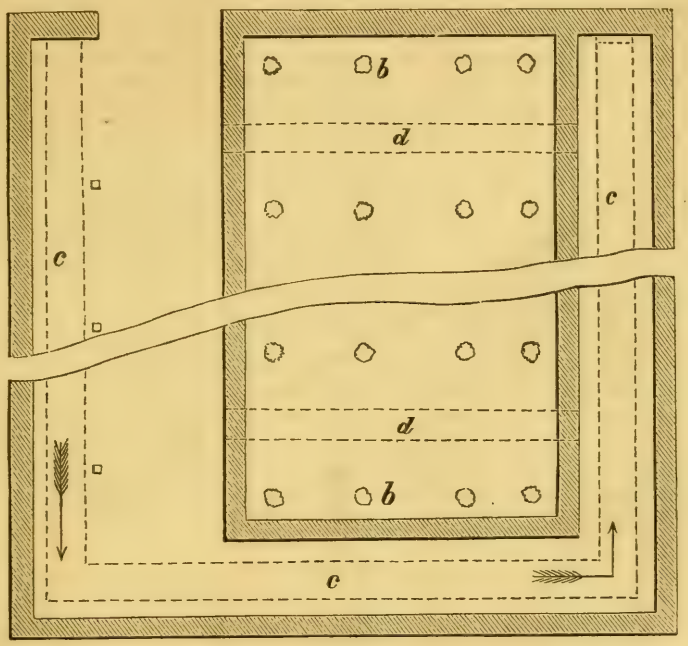


Fig. 2.

imparted by manurial solutions ; these applications should, however, be administered with caution, and only when the plants most require it ; the majority of vine borders are made too rich and extensive at the outset, a fruitful source of maladies, the cause being seldom suspected or recognized. Again, when the fruit approaches maturity the ripening process will be accelerated by gradually withholding water from the roots of the plants. It is well to remember that, just as we remove plants, as it were, from the hands of nature, the necessity increases for a thorough knowledge of the principles of vegetable growth, and the application of its agencies; hence we may expect to hear of failures in orchard houses ; the successful production of crops from this highly artificial state of culture will at once draw a broad line of distinction between the scientific cultivator, and the mere routine practitioner.

It will be observed that the plants are placed two feet from each other, in rows three feet apart; the object in planting thus closely at first is to secure a good crop at once, and, as occasion demands, the plants may be thinned by drawing out the least valuable. It also affords an opportunity of occasionally cutting a plant close by the surface in order to procure young, strong shoots, which are the most productive; heavier crops can be taken from the same surface, from young, vigorous canes, than from old and rigidly spur-pruned stems, according to the present prevalent system of management, and I feel convinced that this mode of renewal in graperies will ultimately become popular, as its advantages become known.

When a plant of two or three years' growth is cut down, a robust growth will follow; this shoot, if allowed to proceed unchecked, would grow to an unnecessary length, and if pruned back in winter the most mature and best fruit buds would be removed. To insure fertility near the base the shoot should be stopped by pinching out the extreme point when about two feet in length. Lateral shoots will now push, and the uppermost should be removed entirely, so as to cause the top bud to break. This treatment will cause the lower buds to fill up; the laterals should be stopped at the second or third leaf from the stem. The same course should be followed when the shoot has grown four or five feet more, keeping the laterals checked, but not entirely removed until the wood commences to ripen, when they may gradually be removed, cutting out the lowermost first. The same treatment is applicable to the preparation of fruiting plants in pots.

The quantity of fruit that can be grown by this arrangement will be much greater than could be secured by any other system, and for early forcing it combines all that is necessary for complete success. Indeed, fruit may be produced at all seasons, allowing the plants a few weeks' rest after ripening a crop, and started again to grow, thus producing more than one yearly crop. Four crops have been thus taken from the same plants in thirty-two months. How long plants would survive such treatment we have no means of ascertaining, but on the renewal mode it might be followed for an indefinite period.

THE "BEAUTIFUL IN NATURE."

BY FOX MEADOW.

It is not down on the green banks where the silvery stream flows, but high up, imbosomed in the mountain's peak, above river and dell—where the vision is lost in the distant azure—where the mind is brought to contemplate the vast magnific grandeur and beauty of creation—where the little hills grow into mountains of loveliness—where they tower up from the valleys below, one over the other, endeavoring to eclipse each other in growing grandeur. On this spot is erected a beautiful palace, whose architectural design claims to be of the Italian order. It is the residence of a "*millionaire.*" And you ask, Mr. Editor, What has this to do with the "Horticulturist?" We will tell you, sir—or, rather, what the "Horticulturist" *ought to have to do with it.* After we had feasted our eyes on the mansion, and filled our heart with the loveliness of the scenery, we asked for the "gar-

dens." The gardens? Yes, sir, we would like to see your gardens. We have none. No gardens? No.—And the millionaire paused. There seemed to be a vacuum in his soul that wanted filling up. The brow of the fair goddess Flora was veiled. Bacchus grew furious, seized the wine-bowl, and vowed he should drink no more until he squeezed the sweet nectar from grapes of his own growth. But the "enchantress" held forth a rose plucked from the dew-drops of morn, the balmy fragrance of which seemed to fill up that vacuum in his soul, and he cried out, Come, let us see where we can make our gardens.

We walked some few paces from the front door, when we were introduced to *this nice spot*, so near the kitchen, so convenient for the cook to gather the parsley, pull the pie-plant, get the cabbage and potatoes, and the children pick the strawberries; besides, we have all our outhouses here; the manure, too, at the stable, would be close to hand, and any refuse vegetables easily thrown to the pigs. All this certainly is convenient, but do you not think that it is also a great incongruity? You have here all your outhouses in sight of the parlor windows. And what of that? every one knows that we must have such places, and when they can see good barns and stables, they know that *some one* lives there. That is true, sir, if it should so happen there was *nothing in* the barns. Now, to be consistent in this matter, why not have the kitchen and dining-room all together? it would be much more convenient both for you and the cook. Aha, Mr. Rose, I see your notions of gardens are rather aristocratic. No, sir, but we have a strong attachment for the "BEAUTIFUL IN NATURE," and always feel pained when we behold such picturesque spots as this marred and distorted with things so incongruous. Your architect, in designing this beautiful house, has agreeably combined art with nature. There is an adaptability to the situation, and a cheerful combination of both.

The improvement of the grounds is the next point for our consideration, and that from necessity must be carried forward *here* to the left, for on the other side you are close bounded by that beautiful wood. But here—where the grounds are open and free—where we have a charming landscape—where, in reality, exists that which is worth living here for—you must walk through your kitchen to see it. Had your barns and stables, ice-house and well, been sensitive beings, they might well have been proud of their position; but as they are nothing but *inanimate matter, sticks and stones*, things that cannot *see nor feel*, we think the proper place for them ought to have been in your woods out of sight. Well, Mr. Rose, after all I think you are about right. But then if *you* are *right*, my *house* is *wrong*, which *now* appears self-evident. Our compartments should have been placed *here*, where the servants are, and *vice versa*.

Think you, Mr. Editor, the "HORTICULTURIST" was ever seen in this house? No, sir, or the mother earth never would have been so barren: not a solitary fruit of any description could be found on the place. Nothing but stocks, bonds, mortgages, and interest, had entered there. But we say, *send them the* "HORTICULTURIST;" *send it home to their doors, and let it knock aloud there. Mail it there free, sir*, and tell them it's the *joint voluntary contribution of the poor hard-working gardeners*, into whose souls the spirit of the immortal "*Downing*" is constantly whispering, in a *still small voice*, "*Adorn their rural homes, sir*," that nature's graceful undulations are not marred by some foreign *rule and square*, for you are bound by all the ties of nature,

duty, and of love, to respect, improve, and protect the "*Beautiful in Nature.*"

[Thank you, Mr. Meadow, for pleading our cause so eloquently. We shall send the HORTICULTURIST, as you suggest; but we think, in good sooth, it ought to be sent for; the gift ought to be *to* the gardener, and not *from* him. Either way, however, that the rich man's soul may be filled with a love of the "Beautiful in Nature."—ED.]

TOPIARY WORK.

BY J. JAY SMITH, GERMANTOWN, PA.

THAT satirical robber, the memorable Augustus Tomlinson, of Bulwer, says somewhere in "Paul Clifford," "One main reason why men who have been great are disappointed when they retire to private life, is this: memory makes a chief source of enjoyment to those who cease eagerly to hope; but the memory of the great recalls only that public life which has disgusted them. Their private life hath slipped insensibly away, leaving faint traces of the sorrow or the joy which found them too busy to heed the simple and quiet impressions of mere domestic vicissitude."

I would have the retired man to be active, his mind directing his hands, and thus possessing a resource for every day. The private life should slip somewhat insensibly away. It may be taught to do so in a workshop and a lathe looking out upon a lawn or a garden: in the latter let him see some results of his own handy-work; something to which a direction has been given by his own exertion—something in which *nature* has assisted art.

And the training of vines, shrubs, and even trees, is one of those artifices which will continue to give pleasure by carrying out a preconceived idea, and realizing it by degrees. It has been the fashion to rail at artificial scenes: Pope set the fashion, and the witlings followed their leader; but it is by no means ascertained that the human mind, the average intellect, is not capable of deriving pleasure from the surprises which art may introduce. I have myself derived more satisfaction in youth from a huge box-bush hollowed out by time and art, where concealment and quiet could be enjoyed behind a leafy screen, than from mountain scenery, or any scenery but a waterfall. You may assemble all the new evergreens as well as the old in a given space; they may all be growing beautifully according to nature's laws, and delighting your educated taste. Show these to a regular inbred citizen, or to a child, and as respects their education to the subject, their minds differ but little, each being a blank sheet in which no correct lines have been drawn, and they will make little impression. The expression may be "Ah!" or "Yes." Suddenly introduce the same parties to a nook in which are some healthy bushes growing in the shape of an animal, a cross, a crown, or any correctly outlined object, and the exclamation is at once altered; "Oh dear! how very curious! See that dog! how natural!" Your visitor forgets the sublime Cedar of Lebanon, and carries in his memory only the odd, combined, however, with the element which is never to be lost sight of, that human ingenuity, and time, and expense of some kind, have been lavished for your enjoyment.

I am not about to recommend that *therefore* all your trees and bushes should be artificially shaped and cut into grandiose representations; I would confine the art to moderate dimensions, to an out-of-the-way corner, perhaps, or to a spot somewhat sequestered, to which the eye should be unexpectedly introduced; and even here I would not expose my ambition by carving the ludicrous or the monstrous. A fountain represented in a

FIG. 1.



OSAGE ORANGE.

FIG. 2.



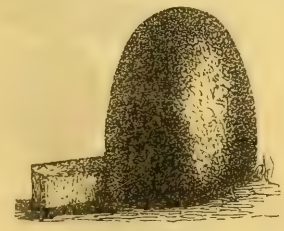
OSAGE ORANGE.

Norway Fir may be eminently beautiful, when a centaur would be simply ridiculous.

There has been too much said against the artificial in landscape gardening; what is it, after all, but artificially imitating nature, the great teacher as well as mother?

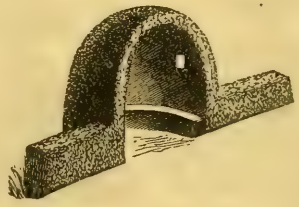
The topiary art is so called, as Salmasius thinks, from the Greek word

FIG. 3.



YEW.

FIG. 4.



YEW.

for a *rope*, because the process of construction was conducted chiefly by means of cords and strings. It was much practised in the seventeenth century. Casaubon describes a scene which existed in his early days somewhere in the suburbs of Paris, on so elaborate a scale, that it represented

Troy besieged, with the two hosts, their several leaders, and all other objects in their full proportion.

There is a fashion in these things, and I am inclined to see topiary work again a little in vogue. Loudon was not disinclined to its moderate existence; under the limitations above indicated, it should never be utterly

Fig. 5.



Fig. 6.



neglected. Evergreens, and those of the slow-growing kinds, are the best for permanency, and for winter as well as summer adornment; but almost any tree or shrub may be subjected to the shears, the knife, the cord, and the wire, even those of loose and straggling habit. The common White Pines at Mr. Hunnewell's have already been mentioned in this magazine; but the Yews, and the Box, and the Cedars, offer the best inducements; the Juni-

Fig. 7.



Fig. 8.

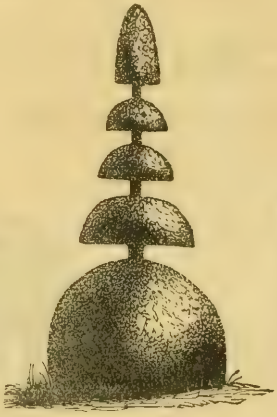


Fig. 9.



pers, too, and many others, will occur to the mind of the experimenter, according to the object he wishes to represent.

I have taken some pains to prepare a few drawings, which, while they will give an idea of what can be accomplished by a little labor and time, are only suggestive; they may be varied *ad libitum*.

The Cratægus or Thorn family are very easily put into shape by shears and interlacing, but there is no plant that I have tried that is so rapidly brought into subjection as the Osage Orange. It takes any shape desired, and in a very short time. Figures 1 and 2 represent two specimens in my own garden which have been respectively trimmed for three and two years, and are now very attractive in summer.

At Elvaston Castle, in England, great expense has been lavished in the purchase of old evergreen plants, either trimmed into shapes or suitable for that purpose. Figures 3 and 4 represent shaded seats, and are of Yew.

Crowns and coronets are readily produced with a little care. The two

Fig. 10.



YEW.

next cuts, Figs. 5 and 6, are patterns easily imitated, and may be of Osage Orange, Yew, or Juniper.

A monument in Yew, Fig. 7, may be readily produced. Figs. 8 and 9 are more elaborate, and will require more time to perfect.

The next cut, Fig. 10, has already been published, but as it is appropriate to the present article, I repeat it. The single plant of which it consists was removed to Elvaston Castle at a cost of one thousand dollars.

Why should one blush when asked to defend pursuits which administer more to taste and refinement than to pecuniary profit? It would never do to balance taste against the want of it, or mental pleasures against such

as are more solid, but I would at any time rather consort with the owner of a garden who worked in it himself, than with the owner of a huge farm whose mind was employed on his commercial profits:

> "Nor does he govern only, or direct,
> But much performs himself. No works, indeed,
> That ask robust, tough sinews, bred to toil,
> Servile employ; *but such as may amuse,*
> Not tire, demanding rather skill than force."

THE PEACH-TREE AND ITS ENEMIES.

BY MARGARETTA H. MORRIS, GERMANTOWN, PA.

(See Frontispiece.)

I now send a Peach branch, surrounded by insects that belong to the history of the Peach-tree, as they so largely contribute to that fatal disease, the Yellows; that disease about which so much has been written, and over which so dark a cloud appears to rest, as it has hitherto baffled the skill of the most practical fruit-growers, yielding to no remedy, and in some cases giving the infection to all the trees in the neighborhood.

After years of close attention to the culture of the Peach-tree, I have come to the conclusion, that as soon as the Yellows makes its appearance, the best thing to be done is to cut the tree down and burn it, for all endeavors to restore its health will be lost labor.

I have arrived at this conclusion for the following reasons: The Yellows arises from various causes: first, from soil exhausted of those chemical agents that are necessary for the nourishment of both tree and fruit—agents that have been so abundantly found in the virgin soil of our Middle and Southern States, but which appear to be exhausted by the over-culture of the Peach in the old plantations, but which are as lavishly produced in a new clearing, where Peaches have never been raised: there may be seen Peach-trees, growing in all their pride and glory, and crowned with their rich foliage and most luscious fruit, if they can be protected from late frosts, and their deadly enemies, the insects. A late frost, if severe enough to freeze the sap in the tender and delicate sap-vessels, will be fatal to the tree: though it may linger through the spring and early summer, the effect of impeded circulation will show itself in the exhausting heats of July and August, and the spurious yellow growth will tell the tale that death is inevitable. The tree had better then be cut down, for it is only a cumberer of the ground.

The next deadly enemy is the well-known peach-borer, the *Ægeria exitosa* of Say. This wasp-like insect may be seen hovering around the roots and lower parts of the trunks of the trees, in the bright noondays of June and July, seeking a tender spot where she may thrust her eggs into the sap-vessels of the inner bark, where the young grubs find their food. If undisturbed by the guardian spirit of the orchard and forest, the woodpecker, or by the pruning-knife of the gardener, the little grub feeds in secret on the vital principle of the tree, gnaws its tortuous path around the trunk, and, as winter approaches, seeks shelter under ground among the roots, feeding

on them until the following spring, when it gradually gnaws its way to the lower part of the trunk; it then leaves the tree, and a little beneath the surface of the ground, among the gum and castings that have exuded from the wounded bark, it forms the follicle No. 3 around itself, and, simulating death, awaits its change.

In the early mornings of June the perfect fly may be seen bursting the upper end of the follicle, and gradually emerging from its tomb. At first its delicate wings are wet, and closely rolled about its body. When it has painfully struggled out of the pupa case, No. 4, it clings to the follicle for a few minutes to rest; then it crawls to the trunk of the tree, takes firm hold with its claws of the rough bark, and, with its head upwards, gradually unrolls and expands its wings; the juices from its swollen body rush like rills through the veins of the pendent wings, and in half an hour they will have stretched to their full size and beauty. The upper wings and body of the female, No. 1, are opaque, and of a fine steel blue metallic color, while the under wings are transparent, and glisten with the irised hues of the rainbow; the middle of the body is adorned with an orange-red band, which adds brilliancy to its light and delicate form. The male, No. 2, is smaller than its mate, its body and legs are steel blue, and all four of the wings clear and beautifully iridescent; all the wings are edged with a dark blue fringe, and the upper pair have a dark wedge-shaped band near the outer extremity.

If the grubs are carefully searched for, and taken from the roots in the months of August and September, the trees may be saved; but if they are allowed to feed unmolested, and girdle the trunk and roots, which is their habit, the yellow and exhausted branches tell the tale that death is inevitable; therefore, cut the tree down and burn it, for it cumbereth the ground.

No. 6 is a magnified drawing of No. 5—the *Tomicus liminaris*. This minute beetle is believed to be the cause of the infectious Yellows. The *Tomicus* is strictly a bark-beetle, as both larva and beetle feed on the sap-vessels of the inner bark of the Peach-tree; they may be found in the grub state in the months of July and August, and if numerous will destroy the tree in which they feed, producing an irritation analogus to the itch in the human species. I have seen them in such numbers that one of these minute grubs was found in every pore of the bark, from the top branch to the root; a swelling of the sap-vessels ensued, and spurious yellow shoots were thrown out from every bud; entire exhaustion and death of the tree soon followed; the grubs became pupa, and changed to beetles in the dying tree, and then took wing and made their home in the nearest tree, which they soon killed in like manner. Thus the infection spread from tree to tree, until ten trees were destroyed before the cause of their death was discovered. In this case it was evident that no care could save the infected trees or protect the healthy ones, but cutting the sickly trees down and burning them, thus destroying this minute but powerful enemy.

In this sad picture there is one bright gleam, showing the beautiful order of the great Creator, who formed these grubs to restrain the undue growth and increase of the fruit-tree, and now provides a check on them, and sends the Ichneumon, our watchful friend and protector. Ever on the wing, or with a quick, light step and jerking motion, it glances from place to place, incessantly tapping the spot on which it alights with its long and delicate feelers, seeking a home for its young, which it finds in the bodies of living grubs

and caterpillars. The moment the Ichneumon discovers the spot where a grub is concealed, it pierces the bark with its sword-like ovapositor, and with unerring instinct darts the egg into the fatty part of the grub, which the young Ichneumon feeds on, never approaching the vital parts, as the continued life of the grub is necessary to its own existence; thus they both feed on until the time of change approaches: then the exhausted grub spins a feeble follicle, in which it dies, while the Ichneumon passes through its death-like sleep in safety, and at the appointed time comes forth a perfect fly, to carry on the work of destruction as its parent had done.

The Peach-trees may be protected from the *Ægeria* by covering the lower part of the trunk and exposed portions of the root with a plaster of rosin and grease, thick enough to prevent the fly from depositing her eggs in the bark.

HEATING APPARATUS FOR HORTICULTURAL GLASS-HOUSES.

BY WM. CHORLTON.

As at this time of the year our heating apparatus, for artificial culture, is in active operation, a few practical remarks relating thereto may be of service to some of your readers.

We all know that fuel of any kind requires to be heated to a certain degree before combustion commences, and when it does take place, heat is given out, and so continues to be, more or less, according to the bulk of material and supply of oxygen derived from the atmosphere, as draught to the furnace. Whatever principle or kind of mechanism we may adopt, it becomes a matter of consideration how to secure and economize this subtle and quickly radiating medium, so as to apply it to the purposes intended; consequently it is evident the machinery that will collect and freely distribute the greatest amount must be the best, and, also, if the whole which is evolved can be secured, we shall have arrived at the maximum of our wishes. Heat from combustion may influence the surrounding atmosphere by direct radiation, or contact with some conducting material, which afterwards distributes it to the desired spot, but as we cannot accept the former, on account of the noxious gases that are liberated therewith, we have to inclose the fire inside a furnace of some kind, and so pass off the deleterious parts by a flue or chimney.

The Brick Flue is the most primitive, direct, and simple method of warming horticultural structures. The heat in this case is conveyed along the interior of what may be called an elongated chimney, generally placed nearly horizontal on the length of the house, and, as the bricks are composed of partially conducting material, it becomes absorbed, and finally liberated on the opposite side, when it is radiated over the entire cubic bulk of the house. When heat has a free exit from its source, and is allowed to pass quickly away into the external atmosphere, a great portion is wasted, which renders necessary the precaution of preventing such loss. If there is a large surface exposed to the action of radiation from the fire, the heat is collected in the chamber and is more effectually compressed against the brickwork and through it, and if the flue is comparatively capacious, the same thing takes place throughout the whole length; but when the furnace

is small, and the flue contracted, there is very little chance of gaining this compression, and the arrangement becomes little better that a channel by which to convey the gases, and heat also, away. For a small greenhouse, the fire-chamber ought not to be smaller than two feet long, two feet high, and eighteen inches wide; and the flue twelve inches high by eight inches wide, inside measure, and for a larger house in proportion. Three feet long, and correspondingly roomy other ways, will, however, be as large as is advisable to construct any furnace. Owing to the tendency of heat to pass upwards, the flue ought to be placed as near the front of the house as may be convenient, continued across it at the farthest end, and out to the chimney, or back again near the middle, and so on to the place of beginning; but in such case care must be used, so as to secure a gentle rise on the whole length, or the heavy gases and occasional damp will impede the draught, and cause danger from bursting, or a deficiency of circulation. The chimney, also, should be raised above the highest part of the house, and not be exposed to the whirl of cross currents. For the same reasons it is better to keep the furnace somewhat below the level of the flue, thereby enabling the heat to radiate more freely from the continual supply, and all bends in the flue should be rounded. As common bricks soon burn out, and are liable to crack, fire-bricks ought to be used for constructing all parts around and adjacent to the fire; and fire-clay tiles, which are now manufactured of all sizes, are the best for covers to the flue. It is scarcely necessary to add, all materials should be of the best quality, and the joints closely and smoothly pointed.

With regard to the relative amount of cubic bulk to be heated, if we take for example a house forty feet long, twelve feet wide, five feet high in front, and fourteen feet high at the back, it will contain a little over 4,500 feet to be acted on. Allowing the temperature outside to be 10° or 20° below zero, and the house a lean-to roof, only ordinarily situated as to protection from cold winds, a flue of the above dimensions, and furnace of the smaller capacity, would raise the internal air to 55° or 60° at midnight; but if the house were to be extended ten feet longer, it would be reduced to 45° or 50°. With a further extension, another fire would be required, and so on according to length. If the cubic volume be greater, without increase of length, the size of both furnace and flue ought to correspond.

Heating by Hot Water is of much more recent introduction than brick flues, and is more worthy of the age we live in. However well the work on flues may be executed, or good the material, they are subject to crack and crumble away, and need constant repairs, to say nothing of the injurious effects caused by the escape of noxious gases, and the destruction of oxygen by the often nearly red-hot bricks, all of which are objectionable considerations. Fortunately, hot water obviates all these evils, and gives us an atmosphere as pure as can be required, and a warmer temperature without any chemical change worthy of notice, with the further advantage of being easily and securely worked by the most ignorant operator, if he only knows how to light and keep a fire going. When any improved principle of practical utility is introduced to the world, there are frequently many and various ingenious devices brought out to accomplish the same end. Such has been the case with our present subject.

It should be understood here, that the boiler is the prime motor by which the circulation is secured, and the pipes are simply conductors of the water,

and radiators of the heat. Of boilers there are many kinds, and if we were to believe the inventors, there is no worst among them. There has not been any reliable set of experiments to test the relative merits of each, neither is it likely there will be at present; but we have practical experience and scientific principles to assist in determining somewhat accurately the amount of work which the different constructions can accomplish with a certain amount of fuel. Taking these two guides as a test point, and we demonstrate that a large surface of metal ought to be exposed to the direct action of the fire, and not only so, but the heat evolved should so come into contact with all parts, that the lines of radiation may strike, as they emerge from the combustion, upon the inner surfaces, so as to cause a refraction, and, consequently, a compression of the heat, which of itself and alone assists in producing more, and therefore a greater amount with a limited supply of fuel. A large radiating surface, then, is the principal advantage, and all others over which the draft may be conducted have only an auxiliary effect, and are of secondary consideration. To make our subject more clear, it may be well to explain the construction of a few of the best boilers that have been submitted to public approval, and which the writer has fully tested by practical operation.

The Saddle Boiler is well known, and fifteen or twenty years ago was considered the best in use. When of the right model, it is a good boiler if properly set and constructed, as in Fig. 1. The end opposite to the front is closed; there are two open spaces, one on each side, for the escape of smoke, and the whole is inclosed in brickwork, with a space left all around, and a flue leading to the chimney. There are many modifications of this principle, but none that we have seen, of such construction, are more powerful than this.

The Cylinder Boiler, as its name indicates, is an upright chamber, having double casings, between which the water is contained; there is a flow pipe at the top, and a return one on the side near to the bottom, while the smoke

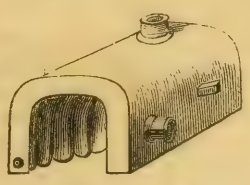


Fig. 1.

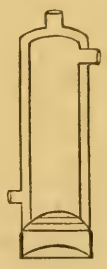


Fig. 2.

is liberated by another pipe on the opposite side, immediately under the upper cap, which is also double, and connected with the upright cylinder. Fig. 2 is a longitudinal cross section. The fire in this model is inside the boiler, and there is the advantage of it occupying little space, besides which, there is no brickwork required. This apparatus will do its work very well; but, owing to the perpendicular form, the heat strikes intensely upon the top or horizontal part, and the sides are only slightly acted on, which produces an unsteady flow of the water in the pipes, and danger of

its flowing over at the feed tank when not even at the boiling point. It is best adapted for very small greenhouses, where a more powerful apparatus is not needed. The deviations from this are the many varieties of corrugated cylinders, and upright tubular boilers, all of which are very little superior. We may also include the *Horizontal Cylinder*, or *Cannon Boiler*, Fig. 3, which is only the above, with a slight alteration, laid down on its side. Here there is the great objection of much space being required; it is cumbersome, and has to be inclosed in a vault of brickwork. In the example given, the fire first plays on the under side to the back, returns again through the middle, and again returns back, more elevated, to the chimney. This is converting nearly all the passages for heat into flues, and, consequently, although it travels a long distance while in connection with the boiler, there is very little radiating power. This construction will work, we admit, but it is far from being the best.

The Cone Boiler.—One of the most primitive boilers was in form like a cone, and was in use thirty years since. This apparatus gave satisfaction at the time. It was simply a double-cased cone, with the water between, a flow pipe at the top, a return one at the side near the base, and the whole was inclosed in a hollow chamber of brickwork. The inner surface of this construction was well formed for the radiation of heat, providing the fire had come into direct contact with the inside, and the outlet been from the upper part of this interior portion; but the first examples of this kind were not so, for the fire was in a grate below, and the boiler raised some distance

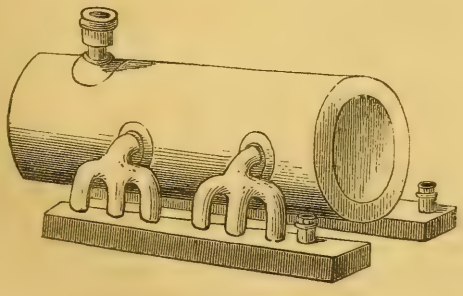


Fig. 3.

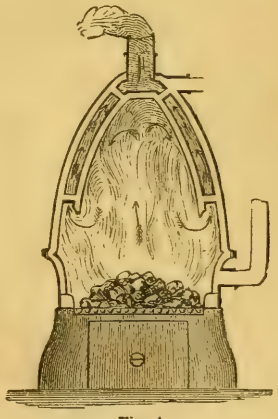


Fig. 4.

above, notwithstanding which a considerable radiation, with compression, was produced, and hence the good quality of this original model. After a time the error as to the position of the fire was corrected, and we had the cone elongated at the base, a door made at the side, a grate fixed inside below, fire-bricks around where the fire was built, and the smoke-pipe placed near the top. This was a great improvement, but not yet complete. Various adjuncts were afterwards added to the interior space, and water passages connecting with the main casings. Each of these alterations have been a progressive step towards connecting the two best models we have so far

had a knowledge of, viz., the *Cone* and *Saddle* forms, and we have, at last, got the two so effectually combined as to make one boiler do nearly the work that two of these would do separately, with the extra advantages of occupying very little room, no brickwork being required ; a small grate ; large space for fuel, (which enables the operator to work a steady heat ;) sufficient volume for radiation, and a large surface furnished in the right position for direct contact. Fig. 4 is an upright cross section of this combination. After having practically operated with nearly all kinds, I have not found any to be so efficient as this, either for power, steadiness of action, or the little attention required. What is hitherto mentioned of warming by hot water, is simply a circulation gained by specific gravity without any confined pressure. A given bulk of cold water is heavier than the same cubic contents when heated ; and, of course, when there is a difference in temperature between the upper and lower pipes, and a free egress around the boiler, the heavier and colder part will fall to the lowest point, and the heated, or lighter, is drawn onwards along the upper, until an equilibrium of temperature is arrived at. The action of the fire, when working, is continually heating the water in the boiler, which travels along the flow pipe, cools on its passage onwards, and returns to the boiler much reduced in temperature, and consequently heavier. In this principle there is always a feed-tank placed on the length of the pipes, which is an egress in case of the water boiling, or at the point of forming steam, so that an explosion or any amount of dangerous pressure never can take place ; for so long as the water is kept below the boiling point, the stream is only a placid circulation. The water may be boiled out of the pipes by carelessness, but no danger arises therefrom. When such does occur, steam will be evolved into the house ; the fire ought to be drawn out immediately, the pipes refilled, and set to work as before.

Various kinds of material have been tried for circulating water, but nothing answers so well as copper or cast-iron pipes ; and as the former are more expensive, without any counterbalancing benefit, the latter are almost universally adopted. These are generally made four inches in diameter, and jointed together with iron filings and sal-ammoniac. Taking this size as a guide, it may be of service to speak of the proportion in length, according to the amount of warmth required, and the cubic bulk to be heated. Some allowance ought to be made for exposed situations and double span houses, but taking a medium position, and an ordinary lean-to house, where the thermometer may fall sometimes to 10° or 20° below zero, a safe calculation may be considered to be one lineal foot of four-inch pipe for every fifteen cubic feet in the house, when the inside temperature is required to reach 70°, at midnight, (which is as high as is ever wanted for any purpose.) Or, if only 45° to 50°, which is suitable for most common greenhouse culture, then one foot of pipe to twenty-five cubic feet will be sufficient. The heat of the water is taken at 200°, and from these reckonings the intervening differences of other requirements may be estimated.

There are other methods of heating, such as radiating from large surfaces of iron cylinders, which parch the air, and, therefore, are more objectionable than the common flue ; *High Pressure*, or confining the water in small pipes without any outlet, when they may be heated to some 400° ; but there is great danger of bursting in this method, even with care, and it is always unsafe. The Open Tank has been much spoken of, and is good, when a

more than usual ratio of moisture is needed in the atmosphere ; but as the same can be accomplished by open flanges fixed on the pipes, this latter is not worth discussing.

[There are other Hot Water boilers of recent introduction, some of which seem to possess merit ; but they have not yet been tested so as to be spoken of confidently. There is much room for improvement, however, in the best of them. We have seen boilers which we consider, in some important respects, superior to either of those above named. The Cone Boiler is undoubtedly the best of those mentioned by Mr. Chorlton.—Ed.]

BLACK HAMBURGHS IN THE OPEN AIR.

BY R. G. PARDEE.

The important question has often been raised by amateurs, Can these delicious grapes be successfully raised in the open air in the latitude of New York city? I am happy to be enabled, from the experience of others, to give an affirmative answer to the question. For several years past the tables of our Horticultural exhibitions have displayed fine, large, well-ripened bunches of the genuine Black Hamburgh grapes, of a quality that would do no discredit to a respectable cold vinery, from the open garden of *Mrs. Daniel Parish*, at her fine residence on Union Square, in New York city.

A recent visit, taken in connection with others a year or two ago, brought to my notice three large vines, which I am assured have borne good crops of luscious Black Hamburghs every year, with one exception, during the last *nine years ;* and this, too, *without* laying them down or giving them the *least protection.*

If we are asked, How is this? we say in reply: The vines are set in a well-prepared, wide, deep border, arranged by the well-known florist, Mr. Isaac Buchanan, of West Seventeenth-street, at the suggestion of the late Thomas Hogg. The front of the border is covered with a flag-stone walk of the width of from six to eight feet, and the vines are trained on the south wall of the carriage-house. The garden, which is about fifty feet square, is protected on all sides by the buildings on the adjacent streets. Beyond this flag-stone walk, say eight feet in width, is now an Althæa hedge ; formerly an Arbor Vitæ hedge occupied its place, but it was killed during a very severe winter ; the same frost, however, spared the Black Hamburgh vines, though unprotected. The only warming influence we could discover, after a close inspection, was the wide surface of flag-stones in front.

This experiment demonstrates the proposition that Black Hamburgh grapes can be successfully raised in the open air, in this city, under peculiarly favorable circumstances.

A few weeks ago we saw fine large clusters—some weighing about two pounds—of the same choice variety of foreign grape, grown in the open air in the city of Utica, in the fine grounds of the Rev. Philemon H. Fowler, D. D. In this case, however, the vines, including some dozen or fifteen hardy native varieties, Isabella, &c., have to be laid down and buried slightly every winter, in order to withstand the very cold winter weather of Utica. It, however, beautifully illustrates the practicability and importance of "bending

events to one's will," and thus enabling us to enjoy the luxuries of tropical climes, even under adverse circumstances and the severest climate.

[Under very favorable and peculiar circumstances we have no doubt that some varieties of Foreign Grapes may be successfully raised in gardens attached to city residences ; we have seen several such cases. We remember a vine of the White Lisbon, in a yard in the lower part of Water street, which for a period of some twenty years produced annually a fair crop of grapes. It was finally destroyed by the "Great Fire." The fruit of this vine we had opportunities of tasting a number of years, and remember it as being good. With the exception of a border, about three feet wide, the yard was paved with brick. We know of several other vines producing occasional crops of fair fruit under favorable circumstances, and we know, too, of a good many which have utterly failed to ripen half a dozen bunches in as many years. The late Roswell L. Colt, of Paterson, gave much attention to the out-door culture of the Foreign Grape, and met with some success, but finally abandoned it as unsuited to our climate, at least in this latitude; and this, in our opinion, must be the result of all such efforts, notwithstanding an occasional instance of success. Our only dependence, for vineyard culture, must be upon our native varieties, and hybrids from them. This is now so well understood, that it will require a good many instances of success more striking than those given above, to induce practical men to embark in the culture of the Foreign Grape in the vineyard ; and yet we know that thousands and thousands of imported grape cuttings are annually sold in the city of New York at prices for which a good native vine could be purchased at any respectable nursery ; the majority of these cuttings, too, are of kinds positively inferior to our best native grapes, for the table at least. We have had our share of experience in the out-door culture of the Foreign Grape, and our success, at a considerable cost of labor, has been meagre indeed ; and we cannot add much by way of encouragement, except under some such favorable circumstances as those noted by Mr. Pardee ; where these exist, the amateur will find the subject worthy of his attention.—Ed.]

DESIGNS IN RURAL ARCHITECTURE—AN ITALIAN VILLA.

BY G. E. HARNEY, LYNN, MASS.

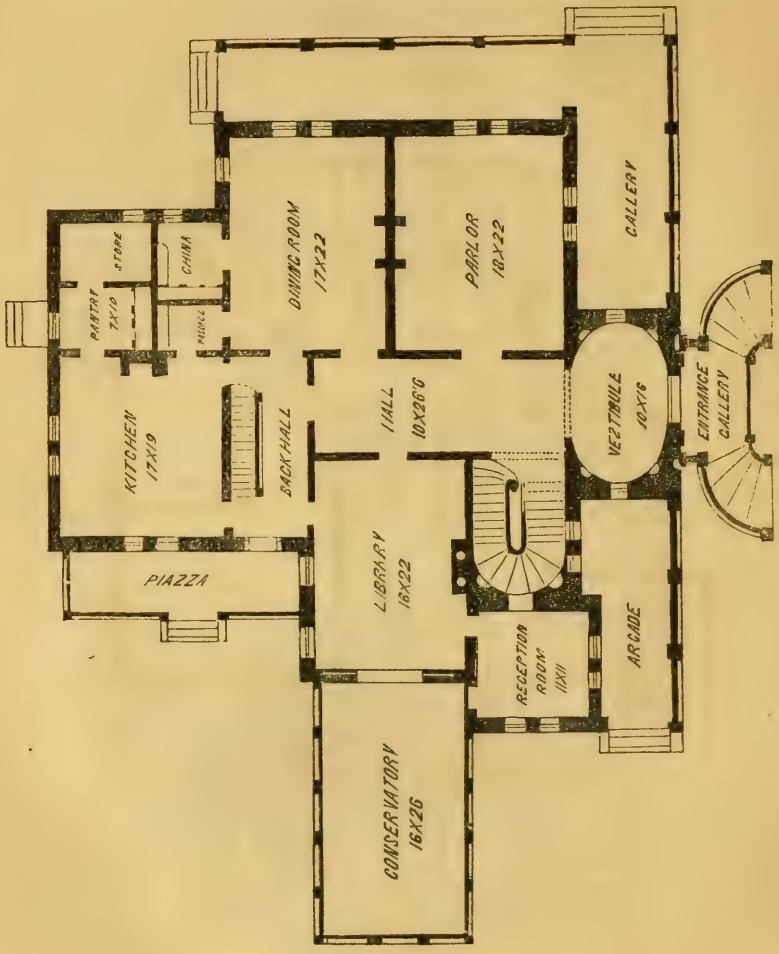
"The villa, or country house proper, is the most refined home of America, the home of its most leisurely and educated class of citizens. Nature and art both lend it their happiest influence. Amid the serenity and peace of sylvan scenes, surrounded by the perennial freshness of nature, enriched without and within by objects of universal beauty and interest—objects that touch the heart and awaken the understanding—it is in such houses that we should look for the happiest social and moral development of our people."

So said Downing, and what better could be said ? what more graceful description, in a few words, of a country home of the first class could we have ? Taking it for a text, we will proceed, without further premising, to the explanation of the design which we offer the readers of the Horticulturist this month.



AN ITALIAN VILLA

We here have a design for an Italian villa of considerable accommodation. Such a dwelling will require for its situation an estate where ample room can be devoted to pleasure grounds alone. It should be situated in the midst of a highly cultivated park, surrounded by noble trees, and looking out upon pleasant lawns and agreeable distant scenery. It is designed to be built of brick and covered with stucco, and the stone trimmings of free-

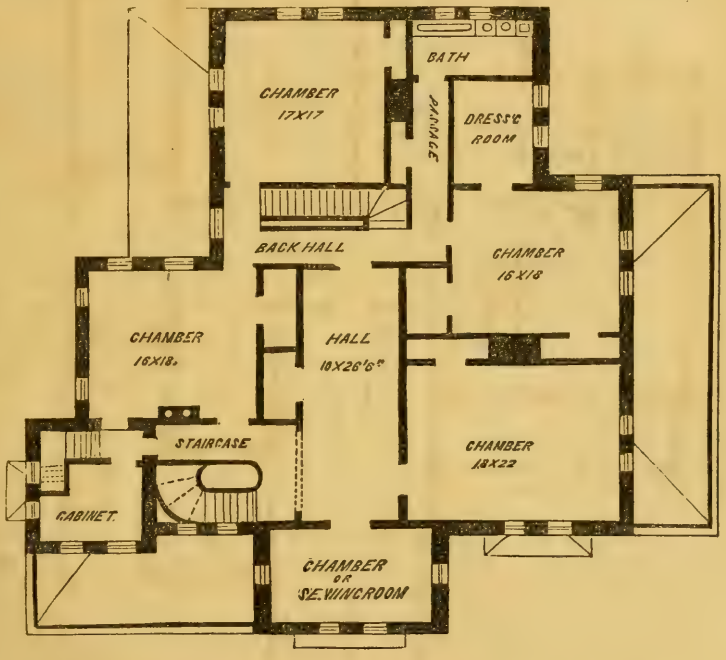


stone, and those of wood painted to correspond ; or, it may be constructed of rough split stone for the main walls, and the same, or a darker color of the same, hammer dressed, for the trimmings. The roof should be covered with tin, laid on in rolls, and painted. The principal windows should all be glazed with plate glass, to give a deep, rich effect to the openings. The interior finish should be plain and simple, but massive in design. Block

paper will have a cool, pleasant effect for the halls and entries ; while for the other rooms of the principal floor we should prefer dark-colored paper, in order to furnish a good background for pictures, &c. The upper and lower halls may be more effectually lighted by having wells in the floors above them, receiving light from the roof lantern, which should be glazed with colored glass.

The arrangement of the rooms is as follows :

The entrance gallery in front is reached by two flights of granite steps, approaching it at the sides ; double glazed doors open into the vestibule, and from this, through an arch, we enter the main hall. Directly on the left is the principal staircase hall, through which we pass to the reception room in the tower. Farther on is the library, fitted with permanent book-



cases, and connecting, by means of glass doors, with a large and pleasant conservatory. This feature, we think, will be quite a favorite ; when filled with rare and beautiful flowers, it will form an appropriate framework to the vista across the lawn and park, seen from a point in the main hall. Returning to the hall, we have, on the right, a parlor in front and a large dining-room in the rear ; connected with this are a large china closet and a passage leading to the kitchen. It also opens into the back hall, containing stairs to the chambers and cellar, and opening upon the back piazza. The kitchen is placed in a convenient position ; adjoining it is a pantry, and beyond the pantry is a good-sized storeroom. In the cellar are wash-room, laundry, storeroom, furnace, cistern, &c.

In the second floor are apartments corresponding mainly with those

below. We have four large chambers, with dressing-rooms attached, a sewing-room, a cabinet in the tower, and a bath-room over the pantry. In the third story of the tower is a large observatory. The first story is 12 feet high in the clear, the second is 10½ feet.

Cost.—The cost of this house would depend, of course, upon the choice of the materials recommended, and the degree of finish given to the interior. I have made no particular estimate, but should think that, with a plain style of finish, built of brick and stucco, it would cost in the neighborhood of $15,000.

ON THE EFFECTS OF EXTREMES OF TEMPERATURE UPON VEGETATION.

BY B. M.

Few subjects connected with horticulture are of more general interest than the preservation of fruit-trees, flowers, and vegetables, from injury by exposure to extremes of temperature. Numerous have been the experiments made, various the theories propounded, and the modes advocated, to avert the evil, and frequent the success, as also the failure, of the methods adopted.

Much remains to be learned, although many facts have been of recent years accumulated in furtherance of the desideratum to be attained. And in the present imperfect state of this horticultural study, it may advance the object in view if we can succeed in inducing the practical men among the readers of the Horticulturist to give the results of their past experience, and to institute experiments with the view to elucidate the subject. In view of the latter object, we venture to offer some remarks which may by possibility be found to some extent useful by those who have not hitherto given more than a passing attention to the matter.

Plants of all descriptions have fixed constitutions, which probably cannot be changed. Each individual is capable of living within certain limits of temperature. What those limits are, whether of heat or of cold, cannot be known, *a priori*, but must be ascertained by experiment. Whatever those limits are, so soon as the plant is subjected to a greater degree of either extreme of temperature, vegetable life ceases. But experience has shown, and shows every day, that *within those extremes*, but *near* the limits of them, a plant sustains injury; and, although not killed, it manifests in different ways unmistakable evidence of that injury, the which, however, the judicious cultivator can by a special mode of treatment remedy and remove; while, on the other hand, unless some particular mode be adopted, the same injury would have destroyed life in the plant.

The subject, therefore, may be said to embrace two principal inquiries, viz.:

1st. What is the nature of the injury sustained by vegetation when subjected to a greater extreme either of heat or cold than is consistent with its healthy state?

2d. Is there any means by which such injury can be guarded against, or remedied, when sustained?

The first of these questions again resolves itself into the inducing cause, whether of heat or cold.

As regards the nature of the injury occasioned to a plant by *excess of*

heat, it will be found that the primary consequence is the evaporation or exhalation of the sap and aqueous portions of the plant. This, if moderate in degree, can be remedied by the removal of the plant to a moist temperature, or by the supply of water to the foliage and root. But if the excess of heat be great, (and whether the atmosphere in which it is present be dry or moist,) the consequence will be, the speedy destruction of vegetable life. The process of such destruction would appear to be, first, a collapse of the vessels and tissue of the plant, and, when the heat is sufficient, combustion of the entire fabric.

When, on the other hand, the nature of the injury received is caused by extreme cold, the effect on the plant will be very different ; but here, again, such effect will vary greatly according to the species and the constitution of the plant. A slight but sudden *comparative* lowering of temperature to a plant that is a native of a hot tropical climate, or to many hardy plants that have been growing in a hothouse or hotbed, will frequently so affect a plant that, unless returned to a higher temperature, its living principle will become extinct. Many a gardener experiences this who, without the due precaution of "hardening off," as he terms it, turns out his young plants from his propagating frames to the open ground. In this instance the injury sustained will be evidenced by the drooping appearance of the foliage and young shoots of the plant, caused by the *comparative* stagnation of its secretions induced by the lowering of temperature, and the check given to the activity of the vital principle by the sudden withdrawal of greater warmth. Usually such a degree of injury admits of a remedy. But if the degree of cold be increased to the freezing point, the nature of the injury sustained by the plant is altogether of a different character. In freezing we know that water expands, and consequently that the sap contained in the vessels of plants when frozen requires a greater volume. Within certain limits the tissue of which the vessels of plants are formed is elastic : a quality which, however, varies greatly in different species. When cold is severe enough to freeze the aqueous secretions contained in the vessels of a given plant, unless the elastic principle is sufficient to cause the requisite expansion of the several parts, rupture of the tissue must ensue ; and consequently, partial or entire destruction of the organization and of the vital principle follows. But two points here require to be adverted to : the one that the degree of frost may be often sufficient only to affect the outer portion of tissue of the stem ; and the other, that previous to the temperature descending so low as the freezing point the plant may be affected injuriously by a less degree of cold, not only in the mode before adverted to through a partial stagnation of the aqueous secretions, but by the contraction of those secretions from the loss of temperature ; since we must bear in mind that water contracts as it descends towards the freezing points, although it expands in freezing.

The effects, therefore, produced upon plants by extremes of temperature, chiefly appear to be the loss of their secretions by evaporation and exhaustion consequent upon it, in one class of cases, and in others the suspension of the vital energies of the plant, and again, the destruction of the organization by frost. And with reference to the whole it must ever be remembered, that the degrees in which these effects are produced will be varied and modified on the one hand by the *intensity* of the meteorological cause, and on the other by the constitutional power of each species of

plant to contend against it; which experience has shown to differ very widely.

Let us now inquire what means appear best calculated to meet the several contingencies to which we have referred; and how far it appears to be within our control either to remedy or to avoid them.

The class of injuries to plants resulting from heat are practically much better within the control of the gardening world at large than those arising from cold; because they are principally such as occur either from want of care in, or from the ignorance of, the cultivator. Such are the burning of plants in hotbeds, and the injurious effects produced by overheated plant-houses. The remedy in reference to hotbeds is of course easy enough, namely, more care in future. But as regards over-heated plant-houses, a word of caution may not be out of place. One effect of it, the evil of keeping them at too high a temperature for the purpose to which they are applied, is, to prolong injuriously the period of the annual growth, by keeping up an undue excitement of the energies of the plants; and the consequence of that invariably is, that this new growth does not mature sufficiently, and whether for flowers or for fruit, a diminution of the quality of the crop results; and, in addition, an exhausted state of the plants ensues which is sure to enfeeble their powers of production the following year; and in some cases for a much longer period, even on the assumption that the error committed is in future avoided. A caution on this point also may be added, namely, that whenever it is discovered that plant-houses are, or have been, kept overheated, the return to a proper but lower temperature must be effected *gradually*, and not suddenly. Thousands of plants have been destroyed from inattention to this remark.

When we turn, however, to the class of injuries to vegetation resulting *from extremes of cold*, we approach a part of our subject in which every lover of horticulture in these latitudes feels a deep interest, whatever be the branch of it to which his attention is directed. The fruit-grower laments over his trees, the arboriculturist over his tender evergreens, the florist over his numberless rarities, and the market gardener fails not to enhance the value of his early vegetables by lamentations over his losses, real or imaginary, but too often the former.

In order to take some general view of this branch of our subject, it will be best to consider it in reference to some of the practical details in which we every winter meet with it in the ordinary course of the requirements of a gentleman's country residence; for there we too often find it operating unfortunately, notwithstanding the efforts of an intelligent gardener, to the prejudice of every department under his care. For although his skill and care may, and usually do, avert serious injury from this cause in the performance of his varied duties, yet in numberless ways he is compelled to refrain, from this cause alone, from many operations which, but for it, he would lay his hand to, and to lament that expense on the one side, or incapability of climate on the other, preclude the possibility of his carrying out many a vision which his imagination pictures, and which, under other circumstances, he possesses the needful knowledge and ability to realize.

We have above adverted to the effect of frost upon the organization of the tissue of plants. Experience has shown that, where the intensity of the freezing process has not been sufficient to rupture the vessels to any considerable degree, the elasticity of the fibre will preserve the plant from

injury in numerous cases, if not in all. But it is found that, to attain that result, the plant must be thawed very gradually, for if the thaw is sudden there is much greater danger of injury. Why this should be so is not precisely apparent, beyond the assumption that it is connected with the necessity for the elastic principle to be brought into play as *evenly* as possible throughout the *whole structure* of the plant that has become rigid from the effects of frost.

The great object, therefore, in the recovery of plants from the effects of frost, is, to remove the frozen condition as gradually as possible, and to guard them against sudden exposure to heat, and from the direct influence of the sun.

In plant-houses this can be effected by shading the roof, and by syringing the plant with very cold water; taking care, at the same time, that no fire heat is present that will raise the temperature of the house more than a very few degrees above the freezing point. If that course is persevered in for several hours (the syringing being repeated) until the plants assume their natural appearance, it will preserve hundreds that otherwise would have been killed; although, of course, if the frost has been intense, many species may have become injured beyond remedy.

In reference to this subject, (the syringing of frozen plants,) we speak with confidence from experience, and experiments made specially to test the correctness of the principle, many years ago, with plants subjected to several modes of treatment. And we advert to it specially, (although an old remedy,) because we were surprised recently to have its accuracy questioned by a practical man who is undoubtedly a good gardener. Nevertheless, we are satisfied that *if the conditions* we have specified *be observed,* (namely, keeping down the temperature to only just above the freezing point, and shading,) this plan is most valuable. Any one who doubts it has only to subject half a dozen plants of a succulent kind (such as the geranium) to several degrees of frost, and then, when quite stiff, to place some of them in a warm room, and let the others lie twenty-four hours with their entire heads immersed in a tub of *cold* water in a cool cellar, and the result will show the efficacy of removing frost by the mode recommended.

For out-door trees and plants when frozen, shading is perhaps the best method within our power to adopt; the principle, of course, is the same, namely, to let them thaw as gradually as possible. When covered with snow, nothing can be better. But with tender plants it will be well to cover the snow over them with straw or mats, so that the sun may not act directly upon them, and the thawing process be thereby rendered more gradual.

It is well known that many trees and shrubs that are found to be tender in a particular latitude, when placed in a southern aspect, will, notwithstanding, endure the severity of winter when planted on the north side of a fence or wood, so as to be screened in a great measure from the sun's direct rays. This, of course, depends on the same principle, the less sudden nature of the changes of temperature that take place in such a situation.

There is much reason to suppose, also, in regard to the effects of frost upon vegetation, that the alternation and *repetition* of the action of frost and thaw upon it during any given period, is much more prejudicial than the *continued* duration of the same degree of intensity of cold, lasting over an equal consecutive number of days. This possibly arises from the greater

interference with the organization arising from the increased action that is called for in the adaptation of the elastic principle before adverted to, to the exigencies of the changes of temperature. Hence arises a reason for care in guarding, as far as practicable, against the attack of frost; and for watchfulness in the replacing of coverings, when temporarily removed, in winter, to plant structures of all descriptions.

Much diversity of opinion exists among practical men as to the advantage or otherwise of protection by straw or other covering to trees and shrubs in the open ground that are somewhat tender. Where the risk is slight only, (according to the species of plant,) we are inclined to run it, in preference to covering. But when there is no question about the tender nature of the plant, then there is no alternative but to have recourse to it. As to the mode to be adopted for deciduous plants, straw neatly bound round them is as good, and possibly as little offensive, as anything. But for evergreens an old barrel or slight wooden structure is the most effective, although not very ornamental.

Whenever out-door coverings are used, they should not be removed too early after the winter, because the plant will be more susceptible of changes of temperature then than it would have been if left exposed to the full action of the weather.

We do not assume that these remarks will be of value to the practical man, but we trust the novice in horticulture may find some benefit from attention to them.

[The preceding article is a suggestive one, and if it were not already so long, we should add here some reflections as to how far the temperature may be carried consistently with the health of the plant, and in furtherance of the specific object in view in cultivating some particular kinds of plants: this we shall do at some future time. At present, however, we wish to endorse emphatically all that B. M. says in regard to the treatment of frozen plants. We have tried it many times, and with entire success. In reference to the protection of out-door plants, we believe that in many cases more injury is sustained by too much covering, than by the severity of the weather; and often plants are covered that do not need any protection. B. M.'s remarks on this head are timely and to the point.—Ed.]

MAXATAWNY GRAPE.

BY DR. W. D. BRINCKLÉ, GROVEVILLE, N. J.

In 1843, several bunches of grapes, growing at Maxatawny, Berks county, Pennsylvania, about twenty miles above Zeiglersville, were sent to a friend residing at Eagleville, Montgomery county, Pennsylvania, six miles above Norristown. The seeds of all these grapes were planted at once; only one, however, vegetated during the following spring. This plant, after remaining three years where it had come up, was removed to near the summit on the north slope of Camp Hill, Montgomery county, Pennsylvania, where it still stands, and is in a flourishing condition. The only protection it has is a dwelling-house on the west side of it, about five feet from the vine. It has been permitted to run wild over a plum-tree that stands near it. Specimens of this fine grape were received by me in September, 1858, from Peter

Crans, Esq., of Springfield township, Montgomery county, Pennsylvania, (post-office address, Mount Airy, Philadelphia,) who deserves the credit of bringing this valuable grape into notice. He has a number of vines growing, from wood taken from the original vine, and during the next winter will have a large supply of the wood, which he will take pleasure in distributing, without cost, among those wishing to grow it.

Bunch five inches long, loosely formed, usually not shouldered, and occasionally quite compact.

Berry, greenish white, sometimes with an amber tint when fully ripe, roundish oval, eleven-sixteenths of an inch long by ten-sixteenths wide.

Flesh tender, not pulpy ; *flavor*, saccharine and delicious; *quality*, "best."

Maturity—eaten 23d September.

The original vine bore 1½ bushels of grapes in 1858. During the past season specimens even finer than those I received in 1858 were sent to me.

My friend, L. E. Berckmans, Esq., has seen the fruit, and fully agrees with me in regard to its excellence. He has a fine plant of this desirable variety.

THE FUCHSIA.

BY JAMES H. FRY, NEW BRIGHTON, STATEN ISLAND.

Of all our summer blooming greenhouse plants, the Fuchsia, with its graceful waxy flowers, deserves especial notice, on account of its easy culture and its beautiful habit and profuse flowering qualities, its varied tints and color, and its almost endless variety ; it is, moreover, a great favorite with the ladies. For these reasons I have been prompted to offer a few remarks upon its propagation and culture.

Propagation.—The best method I have found for propagating the Fuchsia (not having a propagating house) is, by using three-inch pots with one inch of small crocks in the bottom ; a little over one inch of light sandy soil, (leaf mould and sand,) with white sand on the top, level with the pot. By December or January, last season's plants will have started into growth ; choose the strongest shoots, from two to three inches long, and only take off the leaves at the joint to be inserted. Now place six or eight cuttings close to the side of the pot, but not too deep, (say half an inch ;) press the sand to them, and water with a fine rose pot ; put them on a shelf in the warmest part of the greenhouse, and as near as possible to the glass ; if convenient, place a small frame or hand-glass over them, so that you can shade them from the sun, for the most important thing in striking Fuchsia cuttings is not to let them wilt. In two or three weeks, if properly attended to, they will be nicely rooted, and fit for potting off into four-inch pots. By this method I have always been successful.

Culture.—I would recommend, in growing Fuchsia for large specimens, to shift them only three times from the four-inch pot, say into six, eight, and eighteen-inch pots. Keep it to its work, and it will do it willingly if supplied with the proper material. It is not altogether to show this method of propagating the Fuchsia, but that a Fuchsia cutting struck in December can be grown to a height of from four to six feet that will produce a *thousand* blooms in four to six months, ; not a tall, slender object, but a strong, pyram-

idal-shaped plant. Care must be taken, however, while the plant is young and growing freely, not to let the pot get full of roots, for that would check its growth and throw it into bloom ; but it must be shifted, and have a good shift too, for in this particular the Fuchsia is unlike many other plants that only require one size larger pots. For the first two pottings always use light soil, and have the pots well drained, to enable the plant to root freely and grow quickly, for under favorable circumstances it is astonishing to see the rapid growth a Fuchsia will make. After the first or second potting, add loam and well-rotted manure thoroughly mixed. In the summer season they require a good supply of water. When the plants commence branching out, give them plenty of room and frequent syringing, and never allow them to become dry. In the months of July, August, and September, they should be shaded through the middle of the day to prolong their blooming season.

Standard Fuchsia.—There is still another feature in Fuchsia-growing worthy of notice. After you have succeeded in growing fine plants, choose one of each variety of the tallest plants, and cut off all the branches close to the stem, from two to five feet, leaving about a foot to break at the top ; shake them well out, and repot them into a much smaller pot, so that while making its growth it can be shifted two or three times before the blooming season. The shoots must be pinched back so as to form a good head. The contrast with next season's bushy plants will be very striking. Some varieties are not adapted for standards on account of their dwarf habit, but there are enough to make a good variety, and that will repay for the trouble taken with them.

Fuchsias for Rafters.—There are some kinds that are difficult to grow into handsome plants, (although not impossible,) on account of their slender habit ; but still there is a use for them, and one that will show them off to advantage, by training them up a rafter of the greenhouse. Those adapted for this purpose are, *Resplendent*, *Rhoik*, *Banks's Glory*, and *Viola Flora Plena*. The last named is a beautiful double variety, and, above all others, adapted for this purpose, for it will grow ten or twelve feet in one season. It flowers, also, somewhat later in the season than most others. Those named are all dark varieties, but there are two others lately introduced that will answer this purpose : *Lady of the Lake* and *Empress Eugenie*. They have white corollas, but are of a more tender growth.

Winter-blooming Varieties. — Although generally the Fuchsia is considered a summer-blooming plant, there are some few that can be induced to bloom through the winter season, and almost perpetually. Among these, *Speciosa* is one of the best ; it is a strong grower, and one that will bloom with its growth if pruned and shaken out in September, and given a place with other winter-blooming plants.

The following are some of the many varieties worth growing : *For Pyramids*, Glory of England, Alpha, Rosa Quintal, Pearl of England, Catherine Hayes, Souvenir de Chiswick, Queen of Hanover, Venus de Medicis. *For Standards*, Prince Albert, Magnifica, Clapton Hero, Prince Arthur, Speciosa, Ajax. *For Rafters*, Banks's Glory, Resplendent, Lady of the Lake, Rhoik, Viola Flora Plena. *Dwarf Habit*, Microphylla, Omega, Globoso, L'Empereur, Ariel. *Winter-blooming*, Rosa Quintal, Compt de Berlieugh, Speciosa, Microphylla.

EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, &c., intended for the perusal of the Editor, and packages by Express, should be directed to the care of C. M. Saxton, 25 Park Row, New York. Exchanges should be addressed to "The Horticulturist."

Some of our subscribers received the February number late. To secure their indulgence we have only to state that a considerable portion of that issue was destroyed by fire, and we were compelled to put it all in type again. We would say to our correspondents, that if their communications do not always appear promptly, it is because they are sometimes crowded out, or because we think they would be more appropriate a little later. We are obliged to them for their attentions, and are always glad to hear from them.

Yale College Lectures.—We had thought at one time of giving our readers a report of these Lectures, but to do so would require several numbers of our magazine; we must therefore be content to give hereafter such a synopsis as we can make room for. At present we can only indulge in a few general remarks.

We were present during the Horticultural week, and saw and heard enough to convince us that the Lectures were a most decided success. We can not help regarding these Lectures as a happy augury for the future; and it is a fortunate circumstance that they were introduced by good old Yale, one of the foremost and most venerable institutions of learning in the country. It has given them a dignity in the estimation of some which they otherwise would not have assumed; in real importance they are not exceeded, in our opinion, by any in the curriculum of even Yale itself. We hope that what has been so auspiciously begun will hereafter be continued. To Professor Porter, we believe, belongs the chief praise of introducing these Lectures; he has given his time and means to the subject with a self-sacrificing spirit and the greatest enthusiasm, and their great success, and the thorough manner in which they have been appreciated, will constitute no mean reward. In our praise, however, we must include the Lecturers, whose thoroughly practical and able discourses constituted the great element of success. The practical nature of these Lectures was their great characteristic, and gave them their chief value. Men evidently came there to learn facts, and it fortunately so happened that the Lecturers were just the men to give them facts.

We left New York with our publisher and a pleasant party, and arrived in New Haven in time to hear Mr. Wilder's Lecture on Monday night. His subject was American Pomology; and being confined to one lecture, he was necessarily somewhat general in his remarks, though on the Pear he was special enough, giving details in his usual plain, straightforward manner, and with the confidence of a master of his subject. His lecture was heard with great satisfaction. At its close he had to submit to a searching cross-examination, chiefly from Mr. Allen, of Black Rock. He went through the ordeal remarkably well. Here let us say that this cross-

examining was a leading feature of the Lectures; at the close of his lecture, each speaker had to submit to it, and though often trying to him, it had the effect of bringing out a good many important and useful facts. Mr. Allen generally put them through, and he did it with the keenness of a practised lawyer, though generally with so much humor as to convulse the audience with laughter.

Next came Mr. Allen on Fruits, mainly, however, on the Apple. Mr. Allen is a fluent speaker, and not much inclined to confine himself to his notes. He is at times sarcastic, but full of humor. His lecture was interesting, and listened to with marked attention. He sifts pretty thoroughly everything he undertakes.

The third lecturer was Dr. Grant, who, unfortunately, was much indisposed and out of voice. He nevertheless gave a capital and thoroughly practical discourse on the cultivation of the Grape, illustrating his subject with many large and well-executed drawings. His plain, direct, and intelligent answers made him a great favorite. In consequence of his indisposition, he was assisted in his second lecture by Mr. Fuller. In thorough knowledge of the Grape, Dr. Grant, in our opinion, stands "head and shoulders above his fellows."

Fourth on the list was Mr. Pardee, his subject being "Berries." These are his favorites *par excellence*, and he was perfectly at home among them. His clear, concise, and direct manner of treating his subject won for him golden opinions. Both of his lectures were models in their way.

Next we had Professor Johnson, of Yale College, on Agricultural Chemistry. The Professor is modest, but possesses decided originality; he does not yet claim too much for his special department of science, but assigns it, we think, about its proper place as a handmaid to practice, where its usefulness is unquestionably great. The Professor's style is simple, direct, and forcible, and he was listened to with deep interest.

Next on the list was Mr. Barry, who gave two lectures on the propagation and management of fruit-trees. Mr. Barry handled his subject in a masterly manner, being concise, yet comprehensive, and thoroughly practical. The subject of pruning was illustrated on some trees brought for the purpose. His lectures were admirable.

The last lecture we listened to was the first of Mr. Emerson, on Arboriculture. We did not hear much of it, but a glance at the MS. showed it to be an elaborate and carefully prepared production, possessing great beauty of language.

The press was well represented, and we had the pleasure of seeing Mr. Weld of the *Homestead*, Dr. Houghton of the *Gardener's Monthly*, Mr. Olcott of the *Tribune*, Mr. Raymond of the *Times*, and many others.

During our stay we visited the residences of Mr. Fellows, Mr. Reed, Mr. Perit, and others. The grounds of Mr. Fellows and Mr. Reed adjoin each other. The mansions are costly, the grounds elegantly laid out, and the surrounding natural scenery is possessed of great beauty. The greenhouses are well stocked, and presented a fine display of flowers, the Roses, under Mr. Veitch's management, being especially good. What with the Lectures, agreeable calls and visits, a pleasant evening with our old friend Professor Goodrich, a nice little party at Prof. Johnson's, &c., &c., the time passed delightfully away.

But we have kept one good thing, if not the best, till the last. On Thursday evening the professors in the scientific department of Yale, in conjunction with the members of the senior class, gave a grand reception in one of the new College buildings. The guests were received by Professor Silliman in his usual affable manner. President Woolsey was present during a part of the evening, as were also most of the professors, Ex-Governor Baldwin, and other distinguished men. Fully one half of those present were ladies, fair representatives of the beauty, refinement and intelligence of New Haven female society. The evening was passed in the most delightful social enjoyment. We have been present at gayer scenes, but scarcely remember one where so much good taste, intelligence, and refinement prevailed, the whole pervaded by a fine social spirit which gave a charm to the whole. We yielded to the occasion and its associa-

tions, and for a time could almost imagine we were in some fairy land; but a hint from our companion that it was time "to go" broke the illusion. We lingered for a few moments at the door, cast a last look at the happy faces within, and felt moved to stretch forth our hand and inscribe over the door, "Hæc est porta cœli." When in the street we discovered we had forgotten our "horn," which gave us a good excuse to go back and take *another* last look; and all the way down stairs we kept repeating the words of the poet, "A thing of beauty is a joy forever!"

ORCHIDS.—We are indebted to Mr. Isaac Buchanan, of New York, for a fine collection of flowers of these singular but very interesting plants. *Dendrobium nobile*, from China, is one of the best known, as well as one of the most beautiful. *Epidendrum vitellinum*, from the mountains of Southern Mexico, is very pretty and quite rare. *Phaius grandifolius*, better known, perhaps, as Bletia Tankervilliæ, an old and much admired flower. *Odontoglossum cordatum*, from Guatemala, in Central America, rare and very beautiful. *Myanthus barbatus*, from Demerara, the most curious of all sent us; the bearded labellum gives it a very singular appearance. We are much obliged to Mr. Buchanan for the pleasure he has afforded us.

AMERICAN POMOLOGICAL SOCIETY.—We are informed by Mr. Wilder that this Society will meet in Philadelphia, September 11th. The day is appointed early, in order not to interfere with the exhibitions of the various Agricultural and Horticultural Societies. A large attendance will thus be secured; for members can attend at Philadelphia, and return home in time to look after their local shows.

A POLYTECHNIC INSTITUTE FOR BOSTON.—There was much talk in New York at one time of converting the Crystal Palace into a Polytechnic Institute. The idea was a capital one, but in this instance it all ended in "smoke." We do not despair, however, of yet having something of the kind in connection with our noble Central Park. In Boston a movement on a grand scale has recently been made to secure a portion of the Back Bay lands, to be set "apart and used in all coming time for the erection of buildings, by various existing or future institutions devoted to the sciences and arts, whose museums, cabinets, and repositories of industrial and fine art products shall be so arranged and laid open to the public, as best to promote the educational and material interests of the Commonwealth." Truly a noble project, in which Horticulture bears no mean part. We wish it unbounded success; and of this we are hopeful when we see at the head of it such a man as Marshall P. Wilder.

CUYAHOGA GRAPE.—An unintentional blunder was made last month in advertising Dr. Taylor's new Grape, which we regret, and desire to correct, since it may put him to no little inconvenience. The heading of one of Mr. Robison's letters was mistaken for the advertisement, and inserted at the wrong time. Dr. Taylor will not send out the Cuyahoga until next fall, and in the mean time will exhibit the fruit at our leading Horticultural and Pomological Societies. Due notice will be given of the time, price, &c. We think Dr. Taylor can rely on our "Pomological taste," as pertaining to the grape. It has been put to some pretty severe tests, and, so far as we remember, never succumbed to anything but the Charter Oak. That was a little too much for us.

THE COUNTRY GENTLEMAN.—This is one of the magazines which we always keep on our table, and we allow none but the best there. In looking over the number for February 16th, just at hand, we find a very fair notice of our own February number, and we wish to add here a few words in regard to what is said of the Dwarf Pear. The editor says, "No good propagator at the present time thinks of setting his buds more than an inch or two above the surface; and among the hundreds of thousands we have seen in nurseries of late years, probably not one in a hundred was budded three inches high." He has been rather more fortunate in his obser-

vations than we have, and we are glad to know that so many Dwarf Pears are worked at a height which satisfies so fully the conditions of our proposition. From observations made, rule in hand, in a number of nurseries, and from measurement of trees purchased in different sections of the country, we have found the height to vary, among the best propagators, from about two to six inches; the latter we think too high. By the same process, we have found others to be worked from six to twelve inches high, the latter not often from nurseries, but in trees generally hawked about the country by pedlers, sold in auction-rooms, and exposed in the streets; and against these latter we wished to caution the young pomologist, to whom we specially addressed our remarks; and we wished, too, to drop a caution against deep planting generally. Our opportunities for observation have been by no means small; and we have seen so many cases in which deep planting was manifestly, to us, the cause of failure, that we can not help thinking our remarks timely and to the point. For many years Dwarf Pears have been especial favorites with us, and we wish to do what we can to rescue them from the worst of the difficulties which surround their successful cultivation. The example we gave was a strong one, and selected for that very reason, because, in a more or less modified form, it is one which presents itself to most beginners; but we did not wish to be understood as intimating that such an extreme case was now common, though we have seen some quite as bad within the past two or three years. We regard bad planting as the most common cause of failure, and bad cultivation as the next. We can not place the latter first in the category, because a badly-planted tree will not often do well, even with good cultivation, whereas a well-planted tree will frequently give fair results with very indifferent treatment. We are not after the good nurserymen, but the bad ones, and we hope our brother Editor will help us to "catch them."

We agree with what is said in regard to the value of Louise Bonne de Jersey, and as to the quality of Easter Beurré and Glout Morceau, but as we were confined to six kinds, we gave what we esteemed six good ones. Vicar of Winkfield does not come up to our mark.

In regard to "Vergouleuse," we must exonerate our reporter from all blame. He wrote the word Virgalieu, and we altered it. We know there is more than one Pear by this name, and we consider the fact a very unfortunate one. In books and catalogues we have Vergouleuse, Virgouleuse, Virgalieu, Virgoloo, Virgoulo, &c., &c., all variations of one and the same name, however many Pears may be called by it. We consider Vergouleuse the proper spelling, and so have adopted it; if any reason can be given for preferring Virgalieu, we are open to conviction. Where more than one Pear bears the same name, an adjective ought to be added to define it, as is the case with the Columbia; though, in fact, in this latter case the word Columbia is all sufficient. Why may we not aim at being somewhat scholarly and exact in our nomenclature?

The Progressive Gardeners' Society.—The gardeners of Philadelphia have recently organized a Society under this name, the object of which, we learn from the *Morning Pennsylvanian*, is "*Mutual improvement* in the branches connected with the profession of horticulture, the elucidation of doubtful points in relation to the culture and treatment of trees, plants, and garden crops generally, and the dissemination, by means of essays and other similar channels, of reliable information on the various operations of gardening. The majority of the members being professional gardeners, actively engaged in the pursuit of their calling, it is assumed that the facts and deductions which may be brought out will be legitimate and useful. At the meeting on the 30th ult., the following officers were elected: (the President to be appointed at each meeting from the roll of members, each member in rotation being eligible:) *Treasurer*, John Gerney, 236 Chestnut, below Third; *Secretary*, R. Robinson Scott, 627 Market, below Seventh."

We have received from Messrs. Husman & Manwaring, of Hermann, Mo., a sample of wine made from the Norton's Seedling grape. It resembles somewhat a claret wine, but had

soured a little before reaching us, probably not having been thoroughly fined. We think it would make a fine wine.

In Mr. Rockwell's advertisement, the prices named for the Concord, Diana, Rebecca, and Delaware Grapes are for *single* plants, and not for a dozen. The New Rochelle Blackberry should be 75 cents per dozen.

Catalogues, &c., Received.—Descriptive Catalogue of Fruit and Ornamental Trees, Flowering Shrubs, Greenhouse Plants, Roses, &c.; also, Vines, Garden Fruits, &c., cultivated at the East New London Nurseries, New London, Conn. Wm. H. Starr, Proprietor, H. E. Chitty, Manager.—A very good collection.

Sixth Annual Catalogue of choice Verbenas, cultivated and sold by Dexter Snow, Chicopee, Mass.—Mr. Snow makes the Verbena a specialty. His collection is very large, embracing every thing worth growing.

Catalogue of Vegetable Seeds, &c., sold at Bridgeman's Horticultural Establishment, Nos. 876 and 878 Broadway, New York. Nursery and Greenhouses at Astoria.—Choice and reliable.

Descriptive Catalogue of Fruits cultivated and for sale at the Mount Hope Nurseries, Rochester, N. Y. Ellwanger & Barry, Proprietors.—Full of choice things, and well printed. The descriptions, and the arrangement generally, are admirable.

Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, &c., cultivated and for sale at the Coshocton Nursery, by T. S. & W. Humrickhouse, Coshocton, Ohio.—Select.

Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, Plants, Vines, &c., cultivated and for sale at the Cumberland Nurseries, Middlesex Station, on the Cumberland Valley Railroad, near Carlisle, Penn.—Very good, and well illustrated.

Descriptive Catalogue of Select Fruit-Trees, Ornamental Trees and Shrubs, cultivated and for sale at the Nurseries of Thomas & Herendeen, Macedon, Wayne Co., and Union Springs, Cayuga Co., N. Y.—A very good and neat Catalogue, nicely illustrated. We "go in" for neatness, even in Catalogues.

Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, and Plants, grown at the Island Nurseries, Egypt, Monroe Co., N. Y. Ramsdell & Loud, Proprietors.—A good one.

Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, Plants, and Vines, cultivated and for sale at the Brooklyn Nursery, Yates Avenue, near Myrtle, Brooklyn, L. I. By Andrew S. Fuller, (late Fuller & Bartlett,) Agent for the sale of Dr. C. W. Grant's Iona Grape-vines.—Very select, with useful suggestions and illustrations.

Hooker's List of Strawberries, besides the best approved kinds, contains the Hooker's Seedling, which, with us, has been a good bearer, and is of delicious flavor.

Circular of James Pentland, Greenmount Garden, Baltimore. Roses Dr. Kane and George Peabody.—We have not seen these Roses, but our predecessor, Mr. Smith, has spoken well of them in a preceding number of the magazine.

Annual Catalogue of Southern and Acclimated Fruit-Trees, Evergreens, Roses, Grape-vines, rare Trees, Shrubs, &c., cultivated and for sale at the Pomaria Nurseries. William Summer, Pomaria, S. C. Columbia Agents, Dr. C. H. Miot and R. M. Stokes. Charleston Agents, Messrs. Ingraham & Webb.—A choice collection, adapted to the climate and wants of the South.

Descriptive Catalogue of Flower Seeds, with practical Directions for their Culture and Treatment. J. M. Thorburn & Co., 15 John street, New York.—Very full and complete, embracing all the new things out.

Wholesale Price List of Hardy Evergreen Trees, &c., collected from the open Pastures, by John W. Adams, Portland, Maine. Mr. Adams also keeps nursery-grown trees for sale.

Circular of Wethersfield Seed-Sower. We have never seen this machine, but it is highly commended by the *Homestead* and other reliable authorities.

Transactions of the Ohio Pomological Society, Ninth Session, held at Columbus, December 7th to 9th, 1859; and Meetings of the Ad Interim Committee at Cleveland, June 30th, 1858, and Zanesville, September 16th, 1859; with Memoirs of the Pioneer Fruit-Growers of the Ohio Valley.—A manual of very interesting facts for the Pomologist, which we shall speak of more fully hereafter. We are glad to see an effort made to rescue from oblivion the names of the pioneer fruit-growers of the West.

Transactions of the Massachusetts Horticultural Society for the year 1859.—We are indebted to Eben. Wight, Esq., Corresponding Secretary, for a handsomely printed copy of the above. It is a credit to all concerned in it. We have run our eye through it, and find that it contains, in the reports of various Committees, &c., a great deal of useful information, well worthy of being preserved and given to the world. It presents the Society in the aspect of an active, useful, and "live" institution, with the handsome surplus of $90,000 in the treasury, and an income of some $5,000 a year from Mount Auburn Cemetery. The Society has recently presented a petition to the Legislature, through Marshall P. Wilder, Esq., asking for a grant of land on Back Bay for the purpose of erecting a new Hall, Conservatories, a Botanical Garden, &c. We hope the Legislature will have the wisdom to grant it.

All the Year Round, by Dickens.—The January number of this serial is at hand, with a rich table of contents. It is published by J. M. Emerson, 37 Park Row, New York.

Annual Meeting of the Fruit Growers' Society of Western New York, held at Rochester, January 4 and 5, 1860, as reported for the *Rural New Yorker*.—Much too valuable a document not to have been put in a better and more permanent form. We lay it aside for future reference.

The Quarterly Journal of Agriculture, published by the United States Agricultural Society. January, 1860. Edited by Ben. Perley Poore, Secretary of the Society.—The present number is taken up with interesting sketches of the Agricultural Exhibitions of 1859.

Genesee Valley Horticultural Society.—The Genesee Valley Horticultural Society held its annual meeting, Feb. 6. The Treasurer's report shows a balance in his hands of $179 41. The following named gentlemen were elected officers for the present year: *President*, Joseph Harris; *First Vice-President*, W. A. Reynolds; *Second Vice-President*, James Vick; *Third Vice-President*, L. A. Ward; *Secretary*, C. W. Seeley; *Treasurer*, F. W. Glen. L. A. Ward moved that the President be authorized to appoint the Standing Committees. Carried. Joseph Frost, P. Barry, and H. E. Hooker were elected to serve on the Executive Committee.

C. W. Seeley, *Secretary.*

Cincinnati Horticultural Society.—*President*, Wm. Orange; *Vice-Presidents*, Wm. Stone, J. P. Foot, F. G. Carey; *Recording Secretary*, E. J. Hooper; *Corresponding Secretary*, E. P. Cranch; *Treasurer*, Robert Clark; *Librarian*, T. F. Allen; *Counsel*, 3 *years*, J. H. Gerard, S. W. Haseltine, Robert Reiley.

Fort Wayne (Indiana) Horticultural Society.—*President*, J. D. G. Nelson; *Vice-Presidents*, M. W. Huxford, Thomas Covington; *Treasurer*, O. W. Jefferds; *Secretary*, H. C. Grey.

Washtenau County (Michigan) Agricultural and Horticultural Society.—*President*, Horace Carpenter; *Recording Secretary*, Newton Sheldon; *Corresponding Secretary*,

J. L. Tappan; *Treasurer*, J. F. Miller. There are also five Vice-Presidents, and an Executive Committee of one from each town and city in the county.

UNION AGRICULTURAL AND HORTICULTURAL SOCIETY.—*President*, Hon. Truman Boardman; *Vice-Presidents*, Warren Halsey, Isaac Banker, Lewis Porter, Jr.; *Secretary*, L. H. Owen; *Treasurer*, F. S. Dumon; *Directors*, James M. Mattison, John Herald, Nestor Woodworth, A. H. Greig, Elnathan Wixom, Samuel M. Barker.

NEW YORK STATE AGRICULTURAL SOCIETY.—*President*, Benj. F. Huntington, Oneida County; *Vice-Presidents*, John Jay, of Westchester County, Charles S. Wainwright, of Dutchess County, Herman Wendall, of Albany, Calvin T. Hulburd, of St. Lawrence, John Butterfield, of Oneida, Francis M. Rotch, of Otsego, James O. Sheldon, of Ontario, T. C. Peters, of Genesee; *Corresponding Secretary*, B. P. Johnson, Albany; *Recording Secretary*, Erastus Corning, Jr., Albany; *Treasurer*, Luther H. Tucker, Albany; *Executive Committee*, Hon. A. B. Dickinson, of Steuben, L. Chandler Ball, of Rensselaer, Charles P. Wood, of Cayuga, Ezra Cornell, of Tompkins, and Sam. T. Thorne, of Dutchess.

UNITED STATES AGRICULTURAL SOCIETY.—*President*, Tench Tilghman, Oxford, Maryland; *Vice-Presidents*, N. B. Cloud, Alabama, Sylvester Mowrey, Arizona, A. W. McKee, California, H. A. Dyer, Connecticut, A. G. Fuller, Dacotah, John Jones, Delaware, W. W. Corcoran, Dist. Columbia, S. A. Mallory, Florida, Richard Peters, Georgia, D. B. Holloway, Indiana, John A. Kennicott, Illinois, Legrand Byington, Iowa, Wm. F. M. Arny, Kansas, W. L. Underwood, Kentucky, J. D. B. DeBow, Louisiana, Ezekiel Holmes, Maine, A. Kimmel, Maryland, John Brooks, Massachusetts, Henry Ledyard, Michigan, H. M. Rice, Minnesota, N. N. Harrison, Mississippi, J. R. Barrett, Missouri, Henry F. French, New Hampshire, H. K. Burgwyn, North Carolina, W. T. Brown, Nebraska, J. H. Frazee, New Jersey, Manuel A. Otero, New Mexico, B. P. Johnston, New York, F. G. Cary, Ohio, J. H. Lane, Oregon, A. Clements, Pennsylvania, Elisha Dyer, Rhode Island, F. W. Alston, South Carolina, Thomas Affleck, Texas, Delano R. Eckels, Utah, Fred. Holbrook, Vermont, W. A. Spence, Virginia, I. I. Stephens, Washington Ter., D. S. Curtis, Wisconsin; *Executive Committee*, T. Tilghman, (*ex-officio*,) Maryland, Marshall P. Wilder, Massachusetts, Henry Wager, New York, John McGowan, Penn., Frederick Smyth, New Hampshire, J. Merryman, Maryland, J. M. Cannon, Iowa, Horace Capron, Illinois, Josiah W. Ware, Virginia, B. P. Poore, (*ex-officio*,) Massachusetts; *Treasurer*, Benjamin B. French, Washington, D. C.; *Secretary*, Ben. Perley Poore, Office, 356 Pennsylvania Avenue, Washington, D. C. Office hours from 9 A. M. to 7 P. M.

NIAGARA COUNTY AGRICULTURAL SOCIETY.—*President*, Franklin Spalding, Lewiston; *Vice-President*, O. P. Knapp, Lockport; *Secretary*, P. D. Walter, Lockport; *Treasurer*, E. O. Holt, Lockport; *Directors*, Wm. Robinson, Royalton, Philip Freeman, Royalton, Daniel Bosserman, Lockport, D. A. Van Valkubugh, Lockport, Alexander Campbell, Newfane, Thomas Scovell, Cambria.

NEW YORK STATE AGRICULTURAL COLLEGE.—Charter, Ordinances, Regulations, and Course of Studies. Officers. *President*, M. R. Patrick, N. Y. Ag. College, Ovid, Seneca Co., N. Y.; *Chairman Board of Trustees*, Hon. John A. King, Jamaica, L. I.; *Sec. Board of Trustees*, Benj. P. Johnson, Albany; *Treasurer*, Arad Joy, Ovid; *Counsel to the Board*, Hon. John E. Seeley, Ovid; *Executive Committee*, Samuel Cheever, Henry Wager, Alexander Thompson, Arad Joy, James O. Sheldon; *Finance Committee*, Henry Wager, J. B. Williams, A. A. Post; *Building Committee*, Henry Wager, Alexander Thompson, Benj. N. Huntington; *Farm Committee*, Henry Wager, Alexander Thompson, James O. Sheldon; *Architect*, S. E. Hewes, Esq.; *Professor of Agricultural Chemistry, Botany, &c.*, Prof. William H. Brewer; *Trustees*, Hon. John A.

King, Jamaica, Hon. William Kelly, Rhinebeck, Hon. Henry Wager, Western, Hon. B. P. Johnson, Albany, Hon. William Buell, Rochester, Joel W. Bacon, Esq., Waterloo, Hon. Abraham A. Post, Flint Creek, Hon. Addison Gardiner, Rochester, Hon. J. B. Williams, Ithaca, Alexander Thompson, M. D., Aurora, E. P. Prentice, Esq., Albany, Maj. M. R. Patrick, Ovid, Hon. Samuel Cheever, Waterford, Arad Joy, Esq., Ovid, Rufus K. Delafield, Esq., New York, James O. Sheldon, Esq., Geneva, Hon. Benj. Huntington, Rome.

The college is situated at Ovid, Seneca Co., N. Y. Its object is to combine theoretical and practical knowledge, to improve the mind and the body at the same time, and thus make healthy, vigorous, industrious, and useful men. It has our warmest commendation.

Ohio Pomological Society.—*President*, A. H. Ernst, Cincinnati; *Vice-President*, Dr. E. Taylor, Cleveland; *Treasurer and Secretary*, M. B. Bateman, Columbus; *Members of the Committee Ad Interim, with the above officers*, J. A. Warder, Cincinnati; S. B. Marshall, Massillon; J. R. Miller, Enon; T. S. Humrickhouse, Coshocton.

St. Lawrence County Agricultural Society.—*President*, Hon. Calvin T. Hulburd, Brasher; *Vice-Presidents*, Joseph Whitney, Madrid; George A. Sheldon, Hermon; Reuben Nott, Oswegatchie; Joseph E. Orvis, Massena; Charles N. Conkey, Canton; Alexander J. Dike, Depeyster; Nelson Doolittle, Russell; Joseph E. Durphey, Hopkinton; *Secretary*, L. E. B. Winslow, Canton; *Treasurer*, George C. Bogue, Canton.

Horticultural Society of College Hill, Ohio.—*President*, Jacob Tuckerman; *Vice-Presidents*, Rev. H. N. Day, E. G. Ricker; *Recording Secretary*, Rev. C. E. Babb; *Corresponding Secretary*, D. B. Pierson; *Fruit Committee*, F. G. Cary, E. G. Ricker, J. Hammitt, Rev. J. H. Wilson, J. W. Caldwell; *Flower Committee*, P. J. Klund, H. N. Day, M. Georgi, M. H. Litzenburgh, Rev. W. H. Van Doren; *Vegetable Committee*, Dr. J. W. Brooks, Chas. Parnell, F. Jessup, A. Grant, Eber Strong.

The Society is composed of about fifty members.

Horti-Agricultural Society of Essex North, Mass.—*President*, E. G. Kelley, M. D., reëlected; *Vice-Presidents*, A. W. Miltimore, William Ashby; *Corresponding and Recording Secretary*, A. Horton; *Treasurer*, W. W. Caldwell, Jr.; *Committee on Fruits*, C. M. Bayley, A. B. Muzzey, Nicholas Johnson, Moody Ordway, Joel Lake; *Committee on Flowers*, Mrs. A. W. Miltimore, Mrs. E. G. Kelley, Mrs. S. J. Spalding, Mrs. George W. Hill, Miss Mary Bartlet; *Committee on Vegetables*, Daniel Adams, William Bricher, William Huff, D. Thurston Colman, George Thurlow.

The President, Secretary and Treasurer, and John Osgood and N. C. Greenough, were constituted the Executive and Finance Committee, and empowered to select additional committees for the next annual exhibition.

Dr. Kelley, Dr. Howe, and George W. Hill were appointed a committee to revise the constitution and by-laws of the Society for publication, with a list of the members.

Cayuga County Agricultural Society.—*President*, William Webster, Sennett; *Vice-President*, William D. Osborn, Mentz; *Secretary*, Benjamin B. Snow, Auburn; *Treasurer*, L. C. Mann, Auburn; *Directors*, Chas. Berlew, Springport; John Bluefield, Aurelius; Israel E. Phelps, Cato; Harrison Hopkins, Sennett; Charles P. Wood, Auburn; Wm. J. N. Sheppard, Niles.

Lane County Agricultural Society, Oregon.—*President*, A. A. Smith; *Vice-Presidents*, J. Southwell, W. S. Brock, N. G. Coleman, and M. Wilkins; *Recording Secretary*, S. Ellsworth; *Corresponding Secretary*, M. H. Harlow; *Treasurer*, F. McMurray; *Committee on*

Agriculture, George Belshaw, William Smith, and E. Powers; *On Manufactures*, J. L. Brumley, I. R. Moores, and J. Davis; *On Domestic Animals*, H. G. Hadley, W. S. Wilson, and J. Vandyne.

Correspondence.

ERRORS CORRECTED.—Mr Ellwanger writes us that several errors occur in connection with his remarks in our report of the Fruit Growers' Society of Western New York. We regret this very much, for we believe our reporter tried to give a fair abstract of the proceedings. We desire to have matters of this kind put right, and, therefore, append Mr. Ellwanger's own account of what he said.

Varieties of Pears that will not grow on Quince.—In answer to a question, What variety of Pears will not grow on Quince? I named the following varieties, viz.: Beurré Bosc, Paradise d'Automne, Dix, and Sheldon. These are good sorts, and should be double-worked; and added, that I preferred the White Doyenné or Virgalieu for a stock for that purpose, being very hardy. *Belle Lucrative*, I said, was one of the best varieties on Quince stocks, while on Pear stock, on our grounds, the fruits were generally inferior.

Quince Stocks.—Mr. Ainsworth said that he had found the Angers the best, to which I replied, that the Fontenay is as good, or even better, for a stock, being hardier and closer grained. The Angers grows faster for a year or two, but the Fontenay afterwards expands more and makes a better union, though some varieties are partial to one and some to the other. Never found the Duchesse d'Angoulême of any value on Pear stocks.

Price of Pears.—The fruits of Louise Bonne de Jersey which we sent to the New York market were *all selected*, and sold for from $16 to $20 per barrel. From the experiments already made, I thought that eight to ten-year-old trees, with good cultivation, would safely yield, at an average per annum, at the rate of over $1000 per acre; and that this variety on our soil would produce at least twice as much money from the same land as any other sort. Our trees are about five to six feet apart.

Grafting Grapes.—In answer to Mr. Bissell, who said that grafting the grape was difficult, I said that I had found no difficulty whatever in grafting; that we graft them within doors as successfully as the Apple. Had cleft-grafted some Diana in the open ground. Graft after the stock vine has made a growth of an inch or two in the spring; tie up with wax cloth, (for in-door grafting we use wax paper,) and bury under ground all but one eye. Always graft under ground, as the wood is firmer there. Have had them grow twenty to thirty feet the first year, and they generally bear the second year. Yours very truly, L. ELLWANGER.

MR. EDITOR:—The article on the Begonia, in your January number, will, no doubt, do well enough for professional gardeners or advanced amateurs, but there are unquestionably many of your readers who, like myself, would be glad to have information on the subject much more precise and amplified. Every one does *not* know how to strike a Begonia cutting. You, probably, know many persons whose "local habitation," "impecuniosity," or other sufficient cause, prevents from having a large greenhouse, or employing an *artist*, but who, notwithstanding, are fond of growing probably a few dozens of Winter-blooming plants. In behalf of this, I think, large class, in which I number myself, I beg you will give, at an early day, a paper "On the Cultivation of the Begonia in Greenhouses," not Hothouses, giving full instructions for the propagation and management of the plants throughout the year, and a descriptive list of the kinds desirable for Greenhouse purposes, either for flowers, foliage, or fragrance.

I shall, perhaps, expose my own ignorance sufficiently, and at the same time inform you as to the capabilities of my greenhouse, when I state, that with me the ordinary varieties of Helio-

trope grow and bloom finely during the entire winter. *Geissomeria longiflora* blooms handsomely during December and January; and I get good flowers from many of the common kinds of greenhouse plants—difficulties are not attempted of purpose. *Begonia manicata* grows and flowers satisfactorily: *Begonia incarnata* flowers moderately well, but the foliage is not good, and the plants do not look thrifty; *Begonia Fuchsioides* does not flower well, and the plants look really shabby.

If time and inclination permit you to answer these questions, or rather this class of questions, "there are a few more of the same sort left." BROOKLYN.

[We believe that "Brooklyn" has here truly presented the real wants of a large class of readers, whose existence even is too frequently ignored. It will be nothing new for us to take them under our special care. In a separate article we have furnished "Brooklyn" with the information he seeks; but, unfortunately, it with others has been crowded out. It will appear next month, and we shall then be ready for his other questions.—ED.]

BEAUFORT, S. C., *7th Jan.*, 1860.

ED. HORTICULTURIST:—While remitting you my subscription, I will add a few remarks upon fruits and fruit-trees from my own experience, that you may dispose of as you think proper. I always, when in my power, manure my fruit-trees, &c., early in the winter, merely putting the manure on the surface, and when in a yard, the poultry scatter it sufficiently; but when in a garden, the rains of winter leach down to the roots all the valuable parts, and the litter remains for a mulching. I do not say that this is the best way to apply manure, but I think I may safely say that it has with me proved a satisfactory one. If the manure could be applied just after the crop of fruit has been ripened, I believe that the succeeding crop would be materially increased, and sometimes protected from frosts, &c. The Dearborn's Seedling Pear proves a very poor grower and bearer, and the fruit is too small. The Rousselet de Rheims ripens about the same time, keeps better, lasts longer, is a larger and better fruit, and the tree the most vigorous grower upon quince that I know of. The Doyenné Roux or Grey Doyenné possesses nearly if not all the good qualities of the Bartlett, while it is, in my opinion, a rather better fruit than either the Bartlett or the White Doyenné, and is one of those best adapted to the quince stock. The greatest objection to it is, that it ripens at the same season with them. The Belle et Bonne proves one of the largest and best of Pears, though it has not proved a very early bearer. Is not the Adams the same as the Henry IVth? And the Oswego Beurré or Reid's Seedling the Grey Doyenné? The Glout Morceau does not succeed with me, though I have been trying it for many years; I have only two small trees, and they have not yet borne fruit, and may also soon die, as all the others have done. The Vicomte de Spoelberch, double-worked on pear, has proved an excessive bearer, therefore requiring *very* severe thinning; but when in perfection a truly delicious fruit, although it is *not* juicy. The Colmar de Silly on quince last year (1858) bore an abundant crop, and the fruit was large and fine, ripening in September. The Belle Epine Dumas bore well, but proved dry and mealy, and ripened in the same month. The Beurré Diel proves a vigorous grower and great bearer, and I find it more healthy, and I think the fruit better, than the Duchesse d'Angoulême. The Bezy de Bretagne proves a very vigorous grower and most abundant bearer; but it is only a stewing fruit, and only medium-sized. It keeps until late, and then proves a tolerable breaking table pear. The Easter Beurré dies out very badly. I find it hard to keep it going. It ripens in October along with the St. Germain, Winter Bonchrêtien, and Josephine de Malines. The Winter Bonchrêtien grows very vigorously upon quince, and, when in perfection, I think it equal to any pear of any season; but, unfortunately, it is very liable to crack, when it is worthless. I gathered my last two Elize d'Hyest in November, but they rotted; this was the first crop. The Beurré d'Aremberg proves fine and late, but the wood cankers very badly.

With a goodly number of Pears in bearing, this fruit is too scarce yet with me during the months of October, November, and December. I have kept a few St. Germains and Winter

Bonchrêtiens till Christmas, and the Elize d'Hyest did not rot until after that, this year; yet it is not every year that I can succeed. In July and August Pears are plentiful, but so are Peaches; and, unfortunately, after these months both become quite too scarce. I have been procuring the reputed latest ripening varieties of Pears in hopes of closing this gap in the fruit season, but with what success I cannot yet tell, as comparatively few have borne. I fear that with Pears as with Apples, we will have to raise our own late-keeping varieties.

The past summer proved one of the least fruitful seasons for Pears with me that I can remember in several years, and yet the Bartlett trees bore the largest crops that I have ever had. The Rousselet de Rheims and Grey Doyenné also bore well, but not to be compared with the Bartlett.

From before Christmas until yesterday noon we have had a long, steady, and brilliant spell of most unusually cold weather. My Orange-trees seem not much injured, and I am in hopes that the rain of this afternoon will materially restore them, so that they may bear fruit. My crop of Oranges being too small for my wants, I was induced to buy a few hundreds from a neighbor, which have rotted very badly indeed, while I believe not one of mine has; mine were carefully *cut* from the trees, and carefully handled afterwards; the others were, I suppose, pulled and thrown about.

I look forward to a large crop of Pears the coming summer, as well as Peaches. If I am not disappointed, how would you like to try a few Pears grown by me? Are there any particular varieties that you would like to taste for comparing with the same grown with you or in the famed modern Athens, where also I suppose you have fruit-growing friends?

With the best wishes for the success of the HORTICULTURIST, I am yours respectfully,

ROBT. CHISOLM.

[The Adams and Henry the Fourth are entirely distinct. The former is a large Pear, and a native of Massachusetts; the latter is small, and an imported variety. The Oswego Beurré and Grey Doyenné are also distinct. We should be very glad of an opportunity of comparing some of your fruit with our own. We shall do our best to be just to the fruit and impartial to you. Send the Adams, Oswego Beurré, Grey Doyenné, Rousselet de Rheims, and any others you think best. In the mean time we should be glad to hear from you again.—ED.]

Bruington, King and Queen Co., Va., 11th Feb., 1860.

EDITOR HORTICULTURIST:—I have been interested in reading an article in the HORTICULTURIST for February, just received, about *Persimmons*, and propose to give, in a few words, an idea I have for some time thought of suggesting to some of the nurserymen, namely, to try *grafting Plums, and Peaches, and Apricots* on the *Persimmon*. I have never heard of its being tried, and expect it would prove a most valuable experiment. I never heard of any insect troubling a Persimmon tree, except, perhaps, sometimes caterpillars in the foliage, and would hardly be afraid to warrant it against Peach-borers and the like. I would be glad to send a few persimmon *seeds* or *young trees* to any reliable nurseryman who would try the matter fairly, he paying the expense of transportation. Yours truly, J. R. G.

[In common with J. R. G., we have never heard of any attempts to graft the Plum, &c., on the Persimmon, and we have no reason to suppose that it would succeed. It is only among allied genera that any good results can be looked for in the way of grafting. Ebenaceæ and Rosaceæ are not sufficiently related to warrant us in expecting a union between them; we do not think they would live harmoniously in the "bonds of wedlock." If, however, any of our readers feel disposed to make the experiment, a good opportunity is here presented of trying what "ill-assorted marriages" can sometimes be made.—ED.]

EDITOR HORTICULTURIST:—I infer from your last number that you intend to make the HORTICULTURIST a little more practical than it has heretofore been. The movement in that direction is to be commended, even so far as to condescend to the occasional notice of *culinary*

vegetables, the more *refined* of them at least, if not the more common, which are the most useful and valuable.

But the object of this note is to extend a piece of information to pomologists, of a practical character, and of practical value, which, in mercy and pity to all young orchards, ought to be known to every owner of a tree from Maine to Texas. I allude to the quite common practice of using coal tar to prevent rabbits and mice from girdling young trees, or ants and other insects from infesting them. To smear the trunk of a young tree with coal tar is a more certain method of killing the tree than chopping it off with an axe even with the surface of the ground; for in the former case they never sprout again, while in the latter they in many cases put out strong and healthy shoots.

The following extracts are from a letter in the *Scientific American* of the 4th inst.:

"Late in the fall of 1848 or 1849, I applied coal tar with a paint-brush to the trunks of 200 young apple-trees, and more than half of them died during the following summer; and those which lived did not recover from the effects of the tar in less than three years. The next year I tried it on some young maples, and they also died. Both the apples and maples swelled and cracked wherever the tar touched them." * * * "I am glad that you have opened this important subject, as erroneous views in regard to it have been propagated on the very highest authority; my first and costly experiment was made on the recommendation of no less a man than the late most highly esteemed A. J. Downing."

Now for my experience. In the spring of 1859, seeing three very handsome young pear-trees about eight years old, infested by thousands of red ants, although they did no harm, I determined, merely as an experiment, to see what effect coal tar would have upon their movements. I fortunately had a faint suspicion that the remedy might prove worse than the disease, and therefore determined to adopt, for once in my life, the homœopathic system. Accordingly, I steeped a strip of cotton cloth, only half an inch wide, in coal tar, and wrapped it around the trunks of the trees near the ground. Half an inch more of tar would have killed them outright. As it was they are much injured. The bark was killed through to the wood; but as the poison was applied in the spring, the descending sap formed a band of callus which sent descending branches across the dead portion, which, forming a connection with the living part below, saved the life of the tree. But they are now made poor disabled *pensioners*, in the prime of life, of promise, and of hope, and may never render any good service again.

The same spring I interspersed among grape trellises small bundles of hay, saturated with coal-tar, hoping its offensive odor would deter the curculio from stinging the fruit. Nevertheless, when ripe, it proved to have been stung to some extent; but this, I thought, occurred before the use of the tar. In that respect it may have been of service. But in applying the tarred bundles some branches were touched more or less with the fluid. Those branches are now all dead.

A friend's experience is this: On setting out a considerable number of young apple-trees he used coal-tar to prevent rabbits and mice from barking them the succeeding winter. To a few he applied the tar directly. These were all killed, not by rabbits or mice, but by the tar. Around the remainder he sprinkled the tar upon straw, leaves, &c., without allowing it to come in contact with the tree. These were not injured by the preventive, which had the desired effect of keeping off the expected depredators.

Another friend informs me of a case which proves conclusively the extraordinary power to kill vegetation possessed by coal tar. It was applied to a row of some 25 or 30 maple trees, from six inches to one foot in diameter, to prevent all possibility of injury from cattle and horses. The majority died the first year. The rest lingered, ugly and moribund, a few years, and died as the first had done, from an over-dose of medicine given with as much ignorance as kindness.

Your readers would be much benefited if you could fill them with prejudice and hostility to this pernicious substance, or teach them to use it to *kill* and not to *save*. It might be usefully

applied, for instance, in killing weeds in gardens; or grass, where it obstinately springs up between the bricks in sidewalks, &c., &c.

I will use this occasion to call attention to a strange and unfortunate omission, as I take it to be, in Downing on the "Fruits and Fruit-Trees of America," and another in the work of J. T. Thomas—"The American Fruit Culturist."

I have never tasted the *Belle de Choisy* Cherry; but all my reading and conversation on the subject of cherries tends to convince me that it is justly entitled to the very first rank among cherries, and is perhaps without a superior. And yet in Downing's work, edition 1859, revised by Charles Downing, I can find *no* description of that fruit; I applied for information where I had the best reason to expect it, and found none. How is this to be accounted for?

Again: the Lawrence Pear, if I mistake not, has, in a few years, so grown upon public esteem as to be regarded at least as among the very best of winter pears, if not itself the best of all, taking into account the beauty, thriftiness, and hardiness of the tree, as well as the size, beauty, and excellence of the fruit. In all these respects, except possibly flavor, it takes the lead, as I suppose, of the Winter Nelis, which has the rank among winter pears that the Seckel has among autumn pears. I esteem friend Thomas's opinion very highly, because, with all his experience, I believe he is a Quaker, and I have never known a Quaker who was unreliable. In his last *pronunciamento* on Fruits (the edition of 1856, the last I could procure) he has nothing to say of the Lawrence Pear, "good, bad, or indifferent;" but gives only an outline drawing.

These books are the best to be had by American readers; but, with such omissions, are defective, whether they are intentional or not. T. E. M.

Chillicothe, Ohio, Feb. 9, 1860.

[We can assure T. E. M. that we mean to *try* to make the HORTICULTURIST a truly practical and useful magazine; one of which its readers shall in all respects be proud. We shall always find a place for just such facts as he sends us. His experiments with coal tar agree with some others we are cognizant of. Unless diluted, or applied as in the case of his friend, it is undoubtedly more fatal than the disease to cure which it is applied. What kind of coal tar did you use? We agree with T. E. M. in regard to the omission of the cherry and the Lawrence Pear. The latter we esteem one of the best and most valuable Pears we have. We cannot account for the omission of these fruits. The gentlemen concerned must do it themselves.—ED.]

To the Editor of the Horticulturist:

In the April number of the last volume I contributed an article on the culture of the Grape for wine-making, in which I stated that we could show vines that had not been stumped in, which had been bearing heavy crops, and promised to do so again. I can now give you the result. One lot of vines grew on 2756.25 square feet, and gave 100 gallons of wine, which will make about 1500 gallons to the acre. The other lots trimmed in the same manner yielded at the same rate. About six miles north of this there is a range of slate hills on which Mr. Joshua Emmert planted two acres in Isabella and Catawba vines. Some were trained on trellises and some on stakes, and he made 600 gallons. Those on trellises were better colored and first ripe. These vines are four years old, and had they been all trained on trellises, and been suffered to have more wood, they would have exceeded this yield. Perhaps I ought to say that the first-named lot was grown by my brother. So you can see, sir, that it is not necessary to go farther than this county for the best wine-making country in the world. There was no trenching or extraordinary culture applied. I think I can hear you say, Well, I wonder if they know what to do with the juice, after they have it? Just wait a little: I will send you some.

Hagerstown, Md. JOHN H. HAYSER.

[We should like to know where *some* of that juice goes to, and so we wait.—ED.]

To the Editor of the Horticulturist:

Under the head of the "Editor's Table," in the first number of the HORTICULTURIST of this volume, is an article headed "How to Cook Locusts," remarking that "During the present year we believe the Locusts are again to make their appearance." The receipt for "cooking" is taken from *Ellis's Madagascar*.

The American locust is, however, a very different insect from the locust of the Eastern hemisphere. They might be equally delicious for those who are fond of such things, but as they appear here at such long intervals, they could not be much depended on. The locust of the East is of the grasshopper family, and is met with every year. Captain Riley, in his travels in Morocco, after his liberation from the Arabs of the African desert, describes them, and gives their likeness. It strongly resembles the large grasshopper we see in roads and paths, flying along before us in summer. He says they fly in immense numbers, fairly darkening the air, appearing like a cloud at a distance, and striking terror to the minds of all where they alight. They are exceedingly voracious, and consume all kinds of vegetation, and leave a desert in their train, frequently producing famine. They have sometimes been seen in Southern Europe.

The American locust is, however, a comparatively innocent insect, at least while in a winged state. Their scientific name is "Cicadia Septendecim," or seventeen-year locusts, as that is the duration of their life; and they appear once in that length of time. We have here in this country two sets of them, and they appear every eight and nine years alternately. The districts in which they appear are not the same size, however. When here last, in 1851, they extended from the eastern base of the Alleghany mountains to within a few miles of Alexandria in Virginia; how far north or south I am not advised. This year they will not extend into the Valley of Virginia beyond the Blue Ridge, but will extend as far north at least as Staten Island, N. Y.; how much farther I do not know. They are singular insects. They may be found approaching the surface of the ground in early spring, making holes of about half an inch in diameter. Those that reach the surface first will wait till about the 20th to the 25th of the fifth month, (May,) when they all appear about one time, seldom earlier than the first, or later than the latter date. At their first appearance they are about three-fourths of an inch long, of a yellow clay color, with six legs, the two hinder ones largest. They generally come up in the early part of the night, and soon begin to climb a tree, a shrub, or some vegetable; and sometimes climb several feet high before their outer skin begins to dry. As soon as this is perceived, they fix themselves firmly by their claws, when their skin begins to open along the back, and the insect forces itself out through this opening. At first they are whitish, but soon turn brown, and finally nearly black on the upper part of the body. Their wings, which appeared as rudimentary at their first appearance, now show that they were nicely folded up in their cases, and soon expand rapidly. The body enlarges to near twice its size, and is from one and a half to two inches in length, and it is altogether a strong and vigorous insect.

Hogs are very fond of them when they first approach the surface of the ground; and birds prey upon them afterwards; and they might suit the palate of those Eastern gastronomes who relish such things, as they are said to be so rich and oily that soap may be made of them. They do not appear to eat vegetables at all while above ground; the only injury they do is in piercing small twigs, where the female deposits her eggs. She is armed with an ovipositor of about half an inch in length, and of the size of a small knitting-needle, the point of which is composed of two pieces, and are lance shaped, having sharp teeth on the edges; by giving these an alternate motion, she is able to penetrate small twigs to their centre, and thus deposits four or five eggs in one incision. She thus moves forward about half an inch, and performs a like operation, and thus again and again, if the twig is smooth; but if there is a knot or branch, she advances further, or seeks another twig, never attempting to enter except in a fair place. Sometimes this is so repeated as to kill the twig; this being about all the injury they do in the winged state. The male insect makes music, while the female does not. The musical apparatus con-

sists of two small drums, one under each wing, acted upon by strings or tendons within the body; the surface is concave and wrinkled, and looks like fine parchment. A tremulous motion is given to the surface, as if acted upon by currents of air from within, and thus produces the sound, which may be heard a considerable distance, and where very numerous, may be heard half a mile. The cricket, and some other insects with a similar apparatus, are classed together under the name of "Cicadiæ." The eggs hatch in a few weeks, and the young insect has the same form as when it emerges from the ground nearly seventeen years afterwards. They descend into the ground, and do not seem to travel horizontally, as they never arise much farther from the stem of the tree than to where the branches reached to. It is supposed that they live upon the roots of trees and vegetables; indeed, some persons have affirmed that they have been found adhering to the roots of trees, as if sucking the sap from them. In this way they may do more harm than is generally supposed. It is probable that their numbers are lessening. Where hogs have the range of orchards and forests, they destroy great numbers at their first appearance, before they deposit their eggs; and it is probable that the time is coming when their numbers will be much reduced from what they have been. YARDLEY TAYLOR.

Loudon County, Va.

[We were aware that the Eastern Locust is not like that of this continent; but in making the statement we should have lost our "point," and in addition, should not have received the above interesting article from Mr. Taylor; so it is all right.—ED.]

To the Editor of the Horticulturist: CLINTON, N. C., Jan'y 29th, 1860.

DEAR SIR:—I am very anxious to contribute whatever I can to science and art, and most especially Horticultural Science. There seems to have been a discovery made during the last year, in relation to our native grapes, that never has been made public. In the month of September, a citizen of our county, Mr. R. F. Boykin, presented to our Agricultural Society a section of the Isabella Grape-vine, or rather several sections I should have said, with grapes in every stage of development. The sections were from one foot to two and a half and three feet long, and generally had from one to three bunches of fine ripe grapes near the proximal end of the vine, while at the distal end they were either in bloom or the size of No. 4 shot, and from the distal end back they gradually increased until they were grown, or full size.

He says the Catawba is susceptible of the same, as proven by him later in the season.

This very desirable object is obtained by summer pruning; that is, as soon as two or three bunches of fruit set on the young shoots, the end of these young shoots are clipped off. The last bud on the shoot generally begins to grow, and soon two or three other bunches set, and so on until frost stops the progress of growth. The vines exhibited showed plainly these prunings.

I have no doubt he has ripe grapes earlier in this way than otherwise, and a regular succession of crops. There may be one drawback attending his mode of cultivation; that is, he might not have a sufficiency of young and vigorous wood for a second year's crop, and he may exhaust his vine prematurely.

The Isabellas here, after about two or three crops, generally mildew and rot very badly, unless they are pruned. If they are cultivated on sandy land without manure they do not rot. The Isabella does not rot in the same way that the Catawba does; in the latter the individual berries rot and drop off, thereby thinning themselves out; while the former rot in whole bunches, and very few are left after the fourth year.

The Scuppernong is the grape of grapes for our county, but I question very much whether the range of its success is very extensive. It does not bear very cold weather; that is already settled. Farther south it all grows to wood, and is not fruitful. Even at Quincy, Florida, a brother of mine informs me that a vine four or five years old had not borne a single berry, and he cut it up as a useless cumberer of his ground. The description given of it in the HORTICUL-

TURIST by my friend J. Van Buren, Esq., of Clarkesville, Georgia, is perfectly correct as far as it goes.

It originated in Scuppernong Creek, in Hyde County, N. C. Has none of the foxy aroma. The vine cannot be told by the most minute observer from the Muscadine. In nine cases out of ten when the seeds are planted they produce the Muscadine, or "Black Bullace," as it is called here. A few years ago there was a gentleman settled near Wilmington, N. C., who planted a vineyard. It was not long before he expressed an opinion that the Scuppernong grape could be educated to bear in bunches like other native and foreign grapes. In about two years he announced the fact, that by pruning in the fall directly after the fruit had ripened, this very desirable end would be attained. Since that his vineyard has gone down, and he has removed to parts unknown. The truth is, that those who have cultivated this grape with the most success never prune it at all in any season.

There are hundreds of acres now planted and being planted in North Carolina with this grape. All that is done is to make a horizontal frame-work for it to run upon. When the grapes ripen, a large cloth is either spread on the ground or held by four corners, while one person simply jars the vine with the end of a stick, and the ripe grapes fall, but not in bunches, except occasionally two or three may be together.

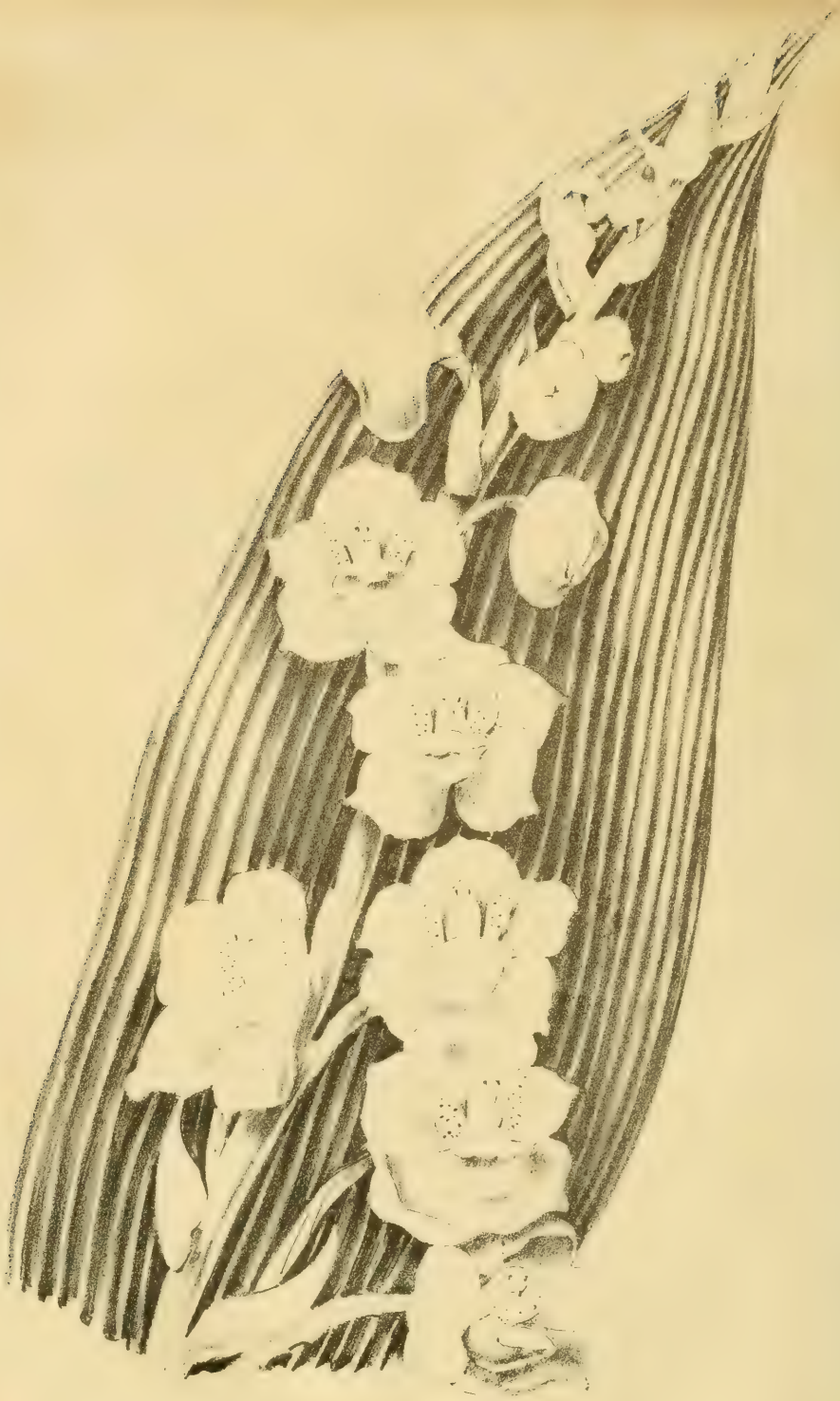
Propagation.—The only way to propagate this best of grapes is by layers. It will very seldom live from cuttings. Yours respectfully, H. A. BIZZELL.

P. S.—Since writing the above, the HORTICULTURIST has come to me, (the Feb'y No.,) and I am glad to see your defence of our native State in relation to the Isabella grape. If I mistake not, I can gather more facts respecting it. H. A. B.

[The discovery alluded to by Mr. Bizzell we fear will prove more curious than useful. At the north it would avail us nothing, for we are glad to get ripe fruit even from the first berries that set. At the south we fear the drawback suggested by Mr. B. will prove a fatal one, viz., the premature exhaustion of the vine. We do not understand, from the above statement, that more than the usual quantity of grapes ripened, (those first set,) all the others being immature. It is worth while, however, to continue the experiment.—ED.]

QUESTIONS FOR HORTICULTURIST.—1. Are there two kinds of Celery, the *solid* and *hollow?* or is this difference in the stalks brought about by the manner of cultivation or accident? I know it is claimed that there are two sorts, but circumstances have led me to doubt this. If there *are* two varieties, it is very difficult to get other than mixed seed. 2. Is it settled beyond a question that it is better to wait until after severe cold weather is over, that is, until early spring, before pruning fruit-trees? M.

[1. There are several varieties of Celery, but they are not divided into solid and hollow. The difference you allude to is the result of bad cultivation and bad seed; very often the latter. Good seed is hard to be got. 2. This matter is not settled beyond a question. No one, however, should prune trees during the severe cold of winter, for, if there were no other objection to it, it cannot at that time be done in a workmanlike manner. Pruning should be done either in the fall or early in spring. Large limbs are best amputated in summer, for the wounds then soonest heal over. This whole subject of pruning fruit-trees, however, is modified by the object in view, such as fruitfulness, increased vigor of growth, &c. The time and mode best for the one are not best for the other, in our opinion. We will give our quærist a chapter on this subject soon.—ED.]



DOVE FLOWER PERISTERIA ELATA.

for THE HORTICULTURIST,
Published by C. M. SAXTON, New-York.

New Method of Constructing Vineries.



N THE *Gardener's Monthly* for February we find an intelligent and interesting article with this heading, by Mr. Bright, of Philadelphia. We esteem the subject of the first importance, and give it a prominent place. While endorsing Mr. Bright's views on the subject of inside borders for graperies, we think we can throw some additional light on it. He has gone somewhat fully over the subject, and we shall not therefore go into detail until such time as we can get our drawings from the engraver, without which the subject cannot be thoroughly understood.

It is now about thirteen years since we first gave our attention to inside borders for graperies, being led thereto by the manifest absurdity of growing the vine, especially in forcing-houses, under two opposite conditions, the head being inside, and the root outside the house ; in all such cases, however, we found the law of compensations silently recognized by covering the border outside with several feet of coarse manure, to give warmth to the roots, but at the expense of cutting them off mostly from atmospheric influences. For some time before this we had regarded thirty feet outside borders as a great mistake, to say the least ; and we were confirmed in this by our experience in growing the grape and the pear in pots, this having been the mode in which we first grew these interesting horticultural subjects. We were further confirmed in this view by subsequently seeing a grapery, one end of the outside border of which only allowed a width of some six feet for the roots to ramble in ; and this end of the house uniformly produced the best grapes. A friend being about erecting a small grapery some time after this, (now nearly eleven years ago,) we induced him, after a great deal of persuasion, to put his borders on the inside ; and that house always more than realized the anticipations that were formed when it was put up. Some years after this we brought the subject before the New York Horticultural Society at one of its conversational meetings, but it failed to arouse any interest among professional gardeners, and they seemed to be of opinion that a departure from the "good old ways" could not be initiated by an amateur. In fact, we have never mentioned the subject in presence of a professional man, with but a few rare exceptions, either before or since, without being convinced that he regarded the idea as an absurdity ; and we are therefore especially glad that a professional man himself has at last taken hold of the subject in good earnest.

About five years since we published an article (editorial) on this subject in the *National Magazine*, stating where vineries of this description could be seen in successful operation ; but that magazine did not reach a class of readers likely to be much interested in such subjects, and the article probably failed of any effect. We, however, from the beginning have talked of the subject among our friends, and have induced several of them from time to time to erect vineries on this principle, and we know of no case in which they have not given the fullest satisfaction. Our own experience is decisive as regards us personally. If we had a thousand graperies to construct for

our own use, they should be constructed in no other way. The principle has become established in our mind as the best of which we yet have any knowledge. Houses upon this principle have been in operation around New York for eight or ten years past, and the principle has thus been tested by time, and Mr. Bright will no doubt be glad to learn that its success has been all that he could wish for. There is one modification, however, which we should mention. Mr. Bright builds a wall inside the house to secure a circulation around the border, and as a security, also, against any possible influence of the outside atmosphere. In all our plans, except one, we have built a double hollow wall four or five feet deep; his plan probably secures the object aimed at more fully, but at greater expense; but of this we do not feel fully assured. Mr. Bright also secures an air passage under his borders, and at the same time thorough drainage. We regard thorough drainage as indispensable, but secure it in a simpler way. These are the two points in which Mr. Bright's plan differs from ours. We claim for the new mode all the advantages that Mr. Bright claims, and more. The house, vines, &c., are not only more under control, and the expense of outside border saved, but the general labor and expense are considerably lessened, and the vines are more uniformly healthy and vigorous; this is equally true, whether of a forcing-house or a cold vinery. In the latter, we claim for the new mode this additional advantage, that the crop of grapes will ripen, under proper management, some *ten days earlier* than under the old system.

In regard to the subdivision of the inside border, we know the advantages to be pretty nearly all that Mr. Bright claims. It gives us a special control over each vine as to manuring, stimulating, replanting, &c., objects sometimes of no little importance. Without, however, going into further detail at present, we will just allude to a friend's grapery, erected in accordance with our suggestions, in which both of the above principles are carried to an extreme. The border is not only made inside the house, but it is *five feet beneath the outside ground level*, and the back border is divided into sections even smaller than those named by Mr. Bright. The width of the house is only thirteen feet. This vinery has been in operation about seven years; the crops are very fine, and the results are in all respects highly satisfactory to the owner. The vines are fruited the whole length of the rafter, and a new shoot laid in each year from top to bottom, the old one being entirely cut out at each pruning. Of this house and some others we shall hereafter give illustrations. In the mean time, we are at liberty to say, that the owner will be glad to show it to any of our readers who may desire to see it.

PROPAGATION OF PLANTS BY CUTTINGS.

BY W. S.

(*Continued from page* 60.)

Management of Cuttings continued.—As remarked in a previous number, there is a certain state of maturity in all plants, at which period they can most readily be propagated. Some emit roots from young growths if simply thrown in a warm, damp atmosphere; others, again, are easily increased from cuttings of matured wood; experiment only can decide the

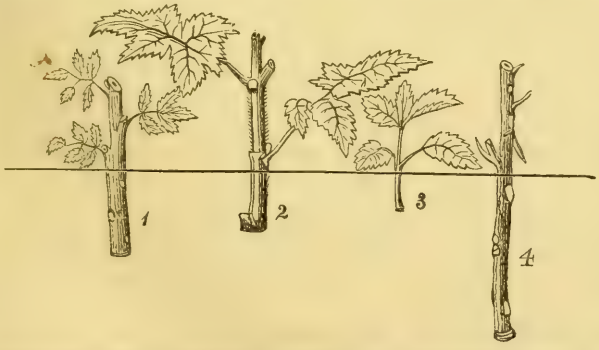
best mode of proceeding with new plants; although certain tribes, as the willow, will sufficiently indicate, by their alliance, the mode of treatment, yet no rule can be formed that will be general, as some individuals of a family may be rapidly propagated, while others are extremely difficult of increase.

The more succulent the cuttings, the more carefully must the agencies of growth be balanced; if subjected to aridity their contained moisture will be evaporated; hence it is necessary that their surrounding atmosphere should be so supplied with moisture as to prevent evaporation. In practice, various expedients may be adopted; close-fitting frames, or houses where extensive propagation is required; and small quantities may be isolated from external changes of atmosphere by covering with glasses; cone-shaped or bell glasses are frequently used in thus protecting cuttings in pots. The same conditions may be secured by placing a flat piece of glass over the mouth of the pot, sufficient space being left for the cuttings between the soil and the glass.

Light in excess is equally injurious, and its results are somewhat similar in effect to those produced by aridity; a slight shading from bright sun is required, just sufficient to prevent the leaves from wilting, gradually removing it as roots are formed.

The necessity of preserving a uniform degree of moisture in the soil has been alluded to. An excess will cause speedy decomposition; if more water is absorbed than the leaves require, they become of a yellowish color, and the base of the cutting will assume a dark and decayed appearance, a sure sign of failure.

Such are the general principles for our guidance in this method of propagation; but in order to illustrate more clearly the care required with different kinds of cuttings, the accompanying figures are introduced. No. 1 may be considered a representation of a rose cutting made from part of a flowering shoot, after the blossoms fade and the wood approaches maturity. There is a considerable portion of accumulated alimentary matter in the branch, and since all its parts are comparatively matured, there will not be much to lose by surface evaporation. Such a cutting will root in the open air, without any covering or protection, if planted where the mid-day sun will not shine on it. And it may be remarked in passing, that rose cuttings put in during August and September on a sandy, shaded border, will root without much further care. No. 2 is a fair representation of a Pelargonium cutting in August; at that season the growth is matured, and leaves comparatively inactive. In a somewhat shaded situation in the open air, cuttings of these plants, taken as in the figure, will root very successfully; they may even be planted in a situation fully exposed to the sun,



provided that a slight shading be afforded for a week or ten days in bright weather. No. 3 represents a young shoot taken from a plant in full vigor of growth; and many plants will root most readily when the shoots are in this condition. In this case the greatest care is required; every part of it is soft, succulent, and immature; the careful retention of the leaves is most important, as upon their preservation the root-forming process depends; at the same time, they are not to be excited into active growth, but must be retarded in a comparatively cool atmosphere, while the soil in which they are placed should be warmed. The air surrounding the leaves must be kept moist to prevent evaporation from their surfaces; shading will also be necessary to prevent rapid decomposition of the gases in their structural formation, and the soil should not be saturated with water, or the succulent stems will decay; at the same time, sufficient moisture should be present to supply absorption, and the more completely these conditions are secured, the greater the certainty of success. No. 4 is a cutting of gooseberry, made of young wood after growth has matured. Currants, grapes, and many other deciduous plants are propagated in this way. Here there is no foliage to exhaust the cutting, and it may therefore be placed out in full exposure at once. The portion inserted in the soil will be amply sufficient to absorb a supply of moisture equal to the loss by evaporation from the exposed surface.

The best time to plant cuttings of this description is in early fall, as soon as the leaves fade, or even before that, if the wood is matured. Selecting a well-drained soil, the cuttings are inserted; the warmth of the ground during October will excite root growth, and many of them will form roots before winter sets in. To prevent heaving by frost, (which, however, will rarely occur to an injurious extent in drained soil,) a covering of leaves or strawy manure should be placed between the rows as a protection; cuttings of this kind, planted in early fall, will gain a season's growth over those inserted during the following spring.

Various methods are adopted to secure the conditions required, in order to propagate by cuttings. Those who have extensive requirements usually have a structure on purpose, where bottom heat is procured by means of hot water in pipes or tanks, of which there are many modifications. Those who have a greenhouse may form a suitable propagating shelf by inclosing a portion of the heating channel, whether flue or pipes, at the warmest end, so as to form a tight chamber, with the heater running through it. Usually there is a front shelf in greenhouses, over the heating apparatus, so that by simply inclosing a space below it a bottom heat can be secured. Ventilators should be provided; some close to the floor of the house, others higher up, so that the heat may be used in the atmosphere of the house when necessary. For all ordinary purposes this arrangement is amply sufficient, and much may be done in a small space of this kind, under proper management.

Frames, or hotbeds, afford a suitable arrangement; much care, however, is required to keep the heat at a proper medium. Where fermenting or decomposing materials are the source of heat, damp is the greatest cause of failure in these hot frames, proceeding from the decay of the manure. Leaves decay slowly, so that a more mild, uniform, and lasting heat will be produced by mixed leaves and manure, than by manure alone.

The Waltonian case, figured and described in a former volume of the

Horticulturist, is admirably arranged for propagating; the cuttings are inserted in sand over a pan of water heated by a lamp when necessary. There have been various modifications of this case made of late years; one exhibited before the Pennsylvania Horticultural Society, which received the name of "The Plantarium," is a useful stand for plants in sitting-rooms; and by a slight alteration, would be exceedingly well adapted for propagating delicate rooting plants.

Cuttings may be safely transmitted to a great distance in hermetically sealed glass bottles; they have grown after being several weeks so packed. A very little water is placed in the bottle.

EVER-BEARING MULBERRIES.

BY WM. R. PRINCE, FLUSHING, L. I.

There are now three varieties of ever-bearing mulberries presented to us for selection or for general adoption.

Downing's Ever-bearing is a seedling of the Multicaulis, which it resembles in wood and foliage. It is therefore necessarily somewhat tender, and not suited to a more northern climate. Mr. D. has given us an ample description of its fruit in his "Fruit-Trees of America," and merits much credit for originating so excellent a fruit.

Herbemont's or Hicks's Ever-bearing is a much hardier variety, and superior to the preceding in size and quality of its fruit, which is produced during a considerably larger period of time. It is a prodigious bearer; the berries are usually nearly two inches in length, sweet and delicious. At the South the fruit continues ripening from the 25th of April until the 15th of August, and here at the North the crop extends to a late period in the autumn. This tree has dark red wood and indented leaves, very distinct from Downing's.

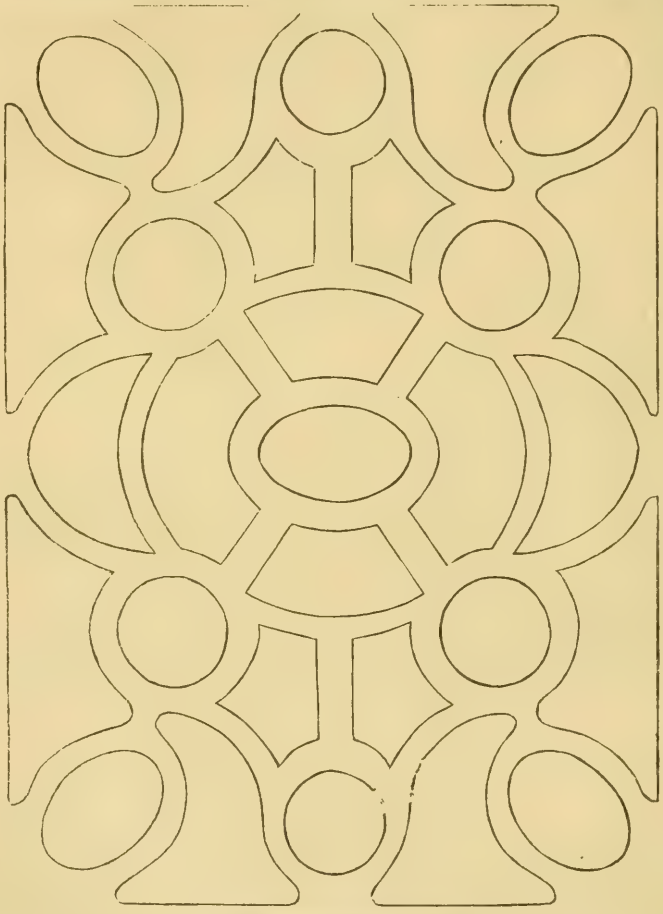
White Ever-bearing, sweet berries, partakes considerably of the character of the White Italian. It grows vigorously, and yields immense quantities of fruit.

PLAN OF A FLOWER-GARDEN.

BY M. COLEMAN, NEW ROCHELLE, N. Y.

Now that the crocus and the snowdrops, the gay harbingers of spring, decorate our gardens with their chaste, simple flowers, and the warblers of more favored climes begin to greet us with their cheering songs, is a proper time to talk of flowers and flower-gardens. A tasteful garden should, during the summer months, present a mass of either flowers or foliage, which can readily be obtained by introducing nothing but constant blooming plants. Plants with variegated and handsome foliage should also be freely introduced. Verbenas, Heliotropes, and Petunias of straggling growth, if not already cut back, should now be attended to, and plunged in a gentle hot-bed to encourage new growth. Straggling shoots of Geraniums and other bedding plants should also be shortened, to encourage new growth near the surface.

Flower-gardens of whatever kind, should be properly laid down at their formation with regular-sized beds, ample path room, and, if a geometrical one, permanent box edgings. The annexed plan was designed and laid down by me in the grouds of A. P. Cumings, Esq., near Mamaroneck, N. Y. It has given so much satisfaction to numerous visitors, that I am induced to make this drawing for the readers of the HORTICULTURIST. Complicated and



PLAN OF A FLOWER-GARDEN.

intricate drawings deter many from adopting them ; the above is free from all such objections ; it is simple in its whole arrangement, and comprises twenty-nine beds, sufficiently large for all practical purposes, and pleasant winding walks, altogether exempt from formal and right lines, too common in geometrical plans.

Here a lover of flowers can display a large collection to the best advantage, planting but one sort in each bed, and, for having a good effect,

properly intermixing the colors. What would be more pleasing to a rose amateur than such a garden filled with tea and other Roses that bloom the whole season, and kept dwarf by pegging down the exuberant shoots? The above plan, as laid down, is surrounded with a walk and border for annuals and mixed flowers, not shown in the drawing.

A HOME IN THE COUNTRY.—No. III.

BY M., SOUTH ORANGE, N. J.

(*Continued from p.* 109.)

In planting the ornamental grounds about our home in the country, let us remember that we are seeking *variety in unity*. Contrasts, then, are admissible, and often desirable, but incongruity is to be avoided. We wish to collect about us as much and as various forms of beauty as possible, and to arrange them harmoniously, so that they will form a beautiful whole. Each object must be so introduced that it will not only present to good advantage its own beauty, but also will not detract from, but, on the contrary, enhance the beauty of surrounding objects.

It will be convenient to present a few hints on this subject, in detached paragraphs, as they occur to me, without any careful attempt to arrange them in the order of their importance.

1. Avoid dotting your grounds all over with trees set at about equal distances one from the other. The effect of such planting is tame and pointless; there is no variety to it.

2. Plant mostly in groups and masses. By a *group* I mean a small number of trees planted near together, at irregular distances, so that they may be said to form one object, although each tree still preserves, to some extent, its own individuality. A *mass* is a larger number of trees, planted yet more closely, so that the individuality of each tree is lost. It is evident that there is room for endless variety in the construction of groups. They may vary in the number and position, as well as description of their trees.

3. Do not generally plant many kinds of trees or shrubs in a single group, and when two or three kinds are so planted, be careful that they are such as will harmonize; such as are not too opposite in their general characteristics. If you have five groups, each containing one each of five particular kinds of trees, your groups are in this just alike, and so lack variety.

4. Avoid regularity, such as planting in squares, circles, or other set figures; or so that the trees are equally distant one from another.

5. So arrange your groups and masses as not to intercept interesting views of the surrounding landscape; also, so as to hide objects which are not attractive. One of the first things to be done, then, in planning your planting, is, to determine which views you wish to preserve, and which to exclude.

6. Do not plant too near together. Remember, that "Tall oaks from little acorns grow," and that the diminutive plants you are arranging are to become large trees. True, you might cut down a portion as they become too large, but it is hard work to order the removal of a thrifty tree, the growth of which you have been watching for years; and so, when planted too closely, trees are often permitted to grow until very much crowded and injured.

7. Avoid the temptation to use evergreens too freely. It is true that "they are green all the year round," but they are more stiff, formal, and gloomy than deciduous trees.

8. In arranging a group, let the tallest growing trees or shrubs be generally (not always) towards the centre of the group, and the smaller ones on the outside.

9. You will save yourself some disappointment and vexation if you are careful to plant only hardy trees and shrubs, remembering that not all which are so classed in the catalogues are really hardy. It is vexatious to see some of your most prized trees cut down by the winter. As to protecting them with straw, screens, barrels, &c., this is not always effectual; and it is like the fashion which young ladies have of putting their hair in curl-papers, thus making frights of themselves for half the day, that they may have a little more fancied beauty for the other half!

10. Too many trees in immediate proximity to the house are to be avoided on the score of health. It is not healthy to live too much in the shade.

11. Evergreens may be planted so as to serve a useful purpose in sheltering from the cold winds, which, with us, come from the north and north-west. They are also the best to use as screens to hide disagreeable objects, because they are effectual at all seasons of the year.

12. The free use of shrubs, of which the variety is now great, and of smaller trees, will tend to increase the apparent extent of your grounds. We unconsciously judge such things by comparisons.

A word on that trite subject, "How to transplant a tree;" and as, in order to determine how to do a thing it is well to know just what the thing to be done is, let us put it in words, that the object is, to remove the tree from one place to another, keeping it as nearly in its present condition as possible. If, therefore, it be practicable to take up the tree with so large a ball of earth that its roots will be entirely uninjured, all that is necessary is, to deposit it in its new place, and it will experience no check in its growth. This is not commonly practicable, however, but we must come as near to it as possible. Dig up the tree carefully, take it up tenderly; do not break or bruise the roots, or suffer them to dry, for this is death to them. Put the roots into their new place as nearly as possible in their natural position—that is, in the position they were in before. This is the whole secret. It is only necessary to remember, that the roots of a tree are very delicate things. They will live a little longer out of the ground, or some substitute, than a fish will out of water, but not much. As to their texture, some of them are scarcely coarser or stronger than cobwebs. Consequently, with all our care, we cannot avoid injuring them considerably, and therefore it is necessary to remove a portion of their branches, for the top is supported by the roots, and if the latter are diminished the former must be also.

Reflect, then, upon what is the present position of the roots of the tree you are about to move; their frailty; how they are spread out and separated, one scarcely ever touching another; how the earth lies closely around them;—remember these things, and you will not need to be told how to go to work to move a tree.

In deciding upon the location and arrangement of groups, a number of poles, of different lengths, will be of assistance. By setting them up in the places where you design to put the trees, you will be assisted in imagining what will be the appearance of the group when completed.

By planting large-growing trees on the top of a hill you will increase its boldness as a feature in the landscape. If, on the contrary, the valley be planted and the hill be left bare, the contrary effect is produced.

It is not my purpose to enumerate the kinds of trees to be employed, and the adaptations of each, but I would like to say a word for fruit-trees, which, it seems to me, may be successfully employed in ornamental planting more extensively than they are. It is curious to observe, by the way, how prone we are to regard everything which is useful as not adapted to ornament, and even to discard it in its ornamental capacity when we discover that it is useful. Thus, tomatoes were considered highly ornamental, and were cultivated in flower-gardens for their beauty until somebody discovered that they were eatable, when they were turned out of the parlor into the kitchen at once, and one would almost as soon expect to see a bed of onions in the flower-garden now as tomatoes. Pear-trees, Cherries, Peaches, Apples, are well worth cultivation for their beauty alone. Indeed, we have few flowering trees that will compare with them. They are so useful, however, that few are willing to admit them into their strictly ornamental grounds ; perhaps they are considered as *working-trees,* which produce something, and therefore occupy a lower grade in the social scale than the aristocratic trees which do nothing but dress themselves in fine clothes ! Seriously, I suppose the objection to them is, that they are often stiff and ungraceful. This is not always so, and may be avoided by grouping and massing them with other suitable trees. Nature has used this plan with admirable effect in one case which comes under my immediate observation. Every spring I have renewed occasion to admire the superlative beauty of a thicket of Apples, Chestnuts, Hickories, Cherries, Oaks, with an under-growth of *Laurus benzoin,* and other shrubs.

THE USE OF CHARCOAL IN GROWING ROSES.

BY A. V., NEW HAVEN, CONN.

From various observations I have made on the use of charcoal in growing Roses, I am disposed to consider it of advantage, whether mixed with the soil in which the plants are grown, or used as a top-dressing. Dr. Gray, in his "Lessons in Botany," says that "carbon itself is a solid, and not at all dissolved by water ; as such, therefore, it cannot be absorbed into the plant, however minute the particles." This is a plain statement, and may be regarded as expressing the opinion of scientific men on the subject. It is also believed, that although plants do not receive any of their carbon from charcoal, they are benefited by the use of it, inasmuch as it is an absorbent of the carbonic acid gas which is in the atmosphere, and thereby presenting it in a fit condition to be taken up by the rootlets in greater quantity than when it is not used.

There is another benefit, however, which it confers,—that of promoting a healthy condition of the roots, and by that means securing them in some measure against the attacks of parasitical fungi, an enemy which ought to be guarded against with the utmost care. The most of the readers of the Horticulturist who have had experience in growing Roses in pots can not but have observed, while planting them out in the spring, or in the fall when

lifting them, the roots of some of them covered with a white mould, or thread-like process, which is the ordinary way in which fungus manifests itself. And it is most destructive, living as it does upon the roots and tender spongioles, thereby incapacitating them from performing their proper functions, and ending in the disease and death of its victims, provided restorative means are not resorted to.

In addition to mixing a little in the soil with which to grow roses, I have for several years used it as a mulching for those growing in pots in the greenhouse, and have invariably been satisfied with the effects produced. From actual experiment, I have found that by using it in this way, the temperature of the mould in the pots is raised one degree above what it is in pots where it is not so applied. The gain of even one degree of heat at the roots of the plants, when it is an object to have them early in bloom, is so far advantageous, and more than equivalent to the labor and expense bestowed.

If mildew is caused, as Loudon somewhere remarks, by the temperature of the soil being greatly below that of the atmosphere in which the plants grow, any means which serve to increase the heat of the former, as in the case of charcoal, must be of benefit in protecting them from the attacks of that enemy. It is readily conceded that other causes may, and do, operate in producing the same effects, such as an undue supply of moisture at the roots of plants, while the surrounding atmosphere is comparatively dry, or the reverse. It is more than probable, however, that any material difference of temperature between the roots and the branches of a growing plant predisposes it to become mildewed.

In regard to the opinion entertained by some, that carbon acts beneficially in counteracting the injurious effects caused by the matter excreted from the roots of plants, little need be said, as there does not seem to be anything like positive proof that such exudations act injuriously in any case whatever; such, at least, is the conclusion arrived at by Prof. Gasparrini, after a series of carefully conducted experiments. At the same time, it is of undoubted benefit in decomposing the "decayed suckers and pilorhizas, and the numerous fibres which perish from natural and accidental causes," and thereby enabling the constituent elements of these to enter into other combinations, in which circumstance they may become food for the plants.

It may be remarked, in conclusion, that the result of my experience is, that when not using charcoal in growing Roses, they have been more or less subject to mildew, and the roots of the plants more apt to be injured by fungus, whereas, with the free use of that material they are not at all liable to be attacked. And, besides, when treated in this way the plants are remarkable for their freshness and beauty; the flowers are so much improved that they seem as though they had been

"Dipped in color's native well."

[We have used charcoal freely, especially in compost for pot plants, and fully endorse all that A. V. says. Charcoal, it is admitted, is not properly a manure; it is rather an absorbent or vehicle of manures, whether liquid or gaseous. We are not quite satisfied as to its specific mode of operation, but we know, that while it improves the soil mechanically, it is highly beneficial to all classes of plants. A. V.'s article should be carefully read.—Ed.]

INARCHING THE GRAPE-VINE.

BY A. N.

This age has often been most emphatically termed the age of improvement. Not only have men ceased to be contented with the quality of that which perfectly satisfied their fathers, but they desire to increase the quantity and to greatly hasten in its acquisition.

Travellers are not content to wait the slow progress of the stage coaches which contented our parents, but insist on express railway trains, and even then are envious of the words which are transmitted by the magnetic telegraph. In horticulture we are not content to await the gradual development of a plant or tree; but we must stimulate its growth and hasten forward its maturity, until we receive in three or four years those returns which satisfied our grandparents in forty.

It is this haste to develop the maturity and to obtain the most speedy returns which has made the dwarf pear so popular. It is this crowding the results of half a dozen seasons into one which has enabled those who plant a tree or set out a vine to do so with the well-grounded hope of enjoying the fruit of their labors; and now it has caused to be revived and brought again into notice that old and useful method of grafting, called inarching. Grafting by approach, or inarching, is the procuring of a union between two branches of separate plants while both branches are in connection with their own roots; in order that, after the union has become perfect, the part of one branch above the connection and of the other below it may be cut away, and the strength of the roots of the one plant go into the branch thus transferred from the other.

This inarching is an old and useful method of grafting, which promises to become an eminently useful practice among our amateurs and gardeners. It is desirable, wherever there is difficulty in securing union between the stock and scion, and especially desirable where a stock has such a tendency to bleed (as the grape has) that it rarely allows the scion to remain where placed, and loses sap enough to be often a serious detriment.

It has been practised for more than a hundred years in its various modifications, one of which is, by taking the branch and plunging the end in a jar of water; (as shown in the January number of the Horticulturist;) another is, by planting the end of the branch in the ground; another is, by planting the scion root in the ground; another, and the one which I recommend, is, the bringing the scion plant near the stock root, in a flower-pot, until the object is attained, and then removing the pot and transferring the plant to the open ground without disturbance of the root or check to the growth.

Inarching is valuable in greenhouses for the Lemon, Orange, Camellia, &c., &c.; and, in our lawns and shrubberies, there are some trees which can only be placed in desirable situations by this process.

Messrs. Bissell & Salter, of Rochester, N. Y., commenced practising it extensively upon their grape-vines in 1858, and with perfect success. It is also spoken of in the *Revue Horticole* of 1859, as copied into the January number of the Horticulturist, (as before stated.) In the *Year Book of the Farm and Garden* for 1860, published by A. M. Spangler, of Philadelphia, is a capital notice, and also in Moore's *Rural New Yorker* for January, 1860.



Fig. 1.

The operation, as practised upon the grape-vine, is as follows: Select a branch of the old vine of as nearly the size of the plant in the pot as possible. Place the pot in the earth at a suitable distance, as shown in figure 3. Remove a small section of the wood of each plant, cutting into the alburnum, as represented in figure 1. Fasten these together firmly, making the inner bark and wood coincide, as in common grafting. The union must be so close as to prevent any space between the two surfaces. Wind with grafting cloth, or with bass bark, or with soft cotton twist, as shown in figure 2, and secure the branches to a stake, so that they shall not be swayed by the wind. If the new vine had been growing in a small pot, it had better be re-potted into a larger pot, just before setting it in the earth; and this, if carefully done, need not disturb the roots, or check its growth in the slightest degree.

This can be done at any time in the year; but we prefer May or June, or when the new shoots of the old vine are about two or three inches long, and while the sap is most active.

It is advisable to gradually sever the connection of the plant in the pot below the junction, cutting it one-third across, and again, and again; thus gradually compelling the scion to receive all its sap from the new root. Union will generally be perfect in two or three months, and the severance of the scion below the junction and of the stock above is to be completed, so that the old root and the new vine are one. The pot is then removed with its vine, which can be transferred to the garden without the slightest disturbance of the roots, or the least check to its growth, even if done in midsummer.

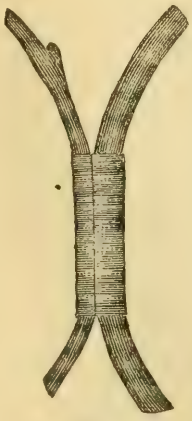


Fig. 2.

The advantages of this process are, 1st. Union is more certain, because the scion remaining in contact with its own root is nourished by its own sap; neither dries nor decays, and remains in a fit condition for union until such time as it is perfected.

2. If union does not take place, all that has been done to the old vine has been the shaving of a small slice of the outer bark from a little place on one side, and all the loss to the vine in the pot is the damage of one or two of the top buds.

3. Risks are almost entirely removed by this mode, because the scion remaining in union with its own root is not in any danger, even if union with the old vine should not take place.

4. It converts an old and comparatively useless vine into a new sort, bestowing upon the recently introduced variety all the advantages of the aged, well-rooted, and long-established vine.

The whole process is a clear gain; because only the upper part of the new vine is used for scions, that part which would otherwise be pruned off by the good gardener; while the moment union is perfect you can remove the pot with the vine, and transfer it to the garden uninjured. In fact, this inarching is only another mode for the purchaser to get two vines in one, and fruit earlier than in any other way; and not only earlier, but more abundantly, because the new sort has all the advantages which the old variety has acquired by long standing in its position, being thoroughly established, and, nothing to do but to grow and bear fruit, and do it well.

5. Two more scions can be inarched upon one root, as shown in figure 3, and a purchaser who already owns his well-established grape root can have one, two, or half a dozen of the newer varieties inarched upon it, each variety sharing the advantages of the old vine, and just as thrifty, strong, and vigorous as if each had been planted and growing for years beside the old farm house.

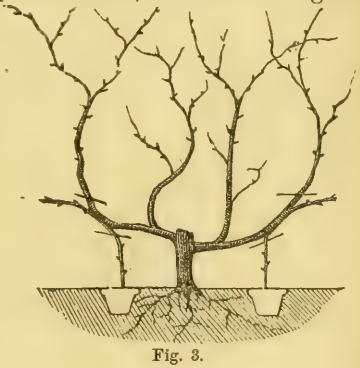


Fig. 3.

6. The old stock can all this while be kept in bearing with its own sort; because the gardener can, as shown in figure 3, select branches which are not to be interfered with, and from them enjoy the same crops as before.

Many times a gentleman has all the taste for enjoying the cultivation of a number of sorts of vines, while he can spare only the space requisite for planting two, four, or six roots. Let him remember, that by the process which we have above described, he can have ten, or twenty, or thirty varieties of grapes upon half a dozen roots, and when he tests them he can have his vines bearing exactly what he pleases, without the delay and the loss of constant digging up, planting, and transplanting.

DOVE FLOWER, OR FLOWER OF THE HOLY SPIRIT.

BY WM. CHORLTON.

(See Frontispiece.)

This singular flower, (of which our frontispiece is a faithful representation, drawn (one-third size) from nature by Mrs. Stirrup,) is the *Peristeria elata* of botanists. It belongs to the class Gynandria, and order Monandria, of Linnæus; and the order Orchidaceæ, sub-division Vandeæ, of the natural arrangement of botany.

Generic characters, *Peristeria.* Perianth globose, sepals somewhat connate with the base of labellum. Petals smaller than the sepals. Labellum erect, articulated in the middle. Column erect, semiterate, dilated at the

base. Anther crestless, two-celled. Pollen masses two, cleft behind. Gland sessile, naked, involving the beak.

Specific characters, *P. elata.* Scape erect, tall. Raceme loose, elongated. Epichilum roundish, serrulated, callous in middle. Hypochilum large. Lobes obtuse, one-toothed, on disk, longer than column.

The genus Peristeria is a very splendid group of pseudo-bulbous epiphytes, among the interesting, grotesque, and beautiful family of orchids. Our present species is the most remarkable of its relations, and is indigenous to the Isthmus of Panama, where it is found growing in low marshy grounds, and springing from the trunks of fallen and rotten trees.

A writer in Harper's Magazine has furnished a very incorrect drawing of this plant, but has, nevertheless, so poetically described it, that I take the liberty of transcribing his words. "Very beautiful, too, were some of the flowers, among which were some of that rare variety of the orchid family known as the *Espiritu Santo.* Its blossom, which is of an alabaster whiteness, approaches the tulip in form, and gives forth a powerful perfume not unlike that of the magnolia ; but it is neither for its beauty of shape, its purity, nor its fragrance, that it is chiefly esteemed. Resting within the cup of the flower, so marvellously formed that no human hand, be it ever so cunning, could excel the resemblance, lies the prone image of a dove. The exquisitely moulded pinions hang lifeless by its sides ; the head bends gently forward ; the tiny bill, tipped with a delicate carmine, (*orange yellow,*) almost touches its snow-white breast ; while the expression of the entire image (and it requires no stretch of the imagination to see the expression) seems the very incarnation of meekness and ethereal innocence. No one who has seen this can wonder that the early Spanish Catholics, ever on the alert for any phenomenon upon which to fasten the idea of a miraculous origin, should have bowed down before this matchless flower and named it '*Flor del Espiritu Santo,*' or 'The flower of the Holy Ghost ;' nor that the still more superstitious Indian should have accepted the imposing title, and ever after gazed upon it with awe and devotional reverence, ascribing a peculiar sanctity even to the ground upon which it blossoms, and to the very air which it lades with delicious fragrance."

As the Dove Flower attracts so much of the attention of travellers over the Isthmus, and is often sent to, or brought by them for friends, who seldom succeed in cultivating it, and more particularly the blooming, a few remarks on this head may be of use to some of your readers. Being what we generally term a swamp plant, and a native of a warm climate, where the thermometer ranges between 75° and 95°, it requires to be kept in a temperature somewhat approaching its natural localities, and the roots in a loose, porous, but damp base. The method by which I have perfectly succeeded is as follows : Accept a soft-baked pot, in size according to the number and strength of the pseudo bulbs. Those large enough for flowering will be the size of a duck's egg, and for three such a gallon pot will be required. At the bottom, place some pieces of charcoal, stuff the crevices with moss, then more charcoal and moss until nearly full ; fix in the bulbs now, around which put more moss, and outside this a few lumps more of charcoal to make them firm ; then cover the surface with more moss, taking care that the bulbs are a trifle elevated in the centre of the pot, and only one-third of their entire length covered. Remove to a warm, close, and damp glass-house, where a temperature is maintained of 60° to 70° in the

night, and 85° to 90° during the day ; shade from the sun, and only give sufficient water to keep the moss moist until the leaves, which spring from the base, have made some growth, after which they may be syringed overhead of an evening, and a more plentiful supply administered to the roots. When the bulbs are fully matured, which may be known by their solidity, and cessation from increase in size, water should be gradually withheld, and finally discontinued altogether, until the flower stems begin to show at the base on one side of the bulbs, after which it may be again plentifully applied as before advised. It will be readily seen that with the above practice there is an active development, and after a maturing and centralizing period, corresponding with the wet and dry seasons of the region inhabited by our subject, which, with the other details mentioned, will enable any person, who has the convenience, to grow, bloom, and enjoy this magnificent flower in all its natural beauty.

In conclusion, I ought to say, the period of rest is through November, December, and January, when the flower stems begin to push, and continue elongating until July, after which the flowers commence expanding, and continue on so for six or seven weeks.

FORCING LETTUCE IN HOTBEDS.

BY PETER HENDERSON, JERSEY CITY.

Not to trespass on your valuable space, I will, as briefly as possible, describe the method of forcing lettuce, as practised by the market gardeners in the vicinity of Jersey City. The dates used, of course, are only applicable to this district and others of similar temperature.

The varieties used are the " Winter" or Brown Dutch, Black-seeded Butter, and Silesia. The seed is sown in cold frames from the 15th to the 25th of September. There is no necessity of pricking out or transplanting lettuce, if the seed is regularly sown on a level surface. On the approach of severe weather—generally about the beginning of December—the young plants are covered by sashes at night, but fully exposed during the day in mild weather, so that by the time they are wanted for planting in the hotbeds they are strong and hardy. We vary the time somewhat in commencing forcing, according to the state of the weather, but our usual time is the first week in January. The first operation is the preparation of the manure, which is fresh from horse-stables, as free from straw as possible ; (but in this we have not always a choice ;) it is carted into a sheltered spot, and thrown into piles in sufficient quantities to ferment. It is then turned over twice at intervals of four or five days, when it is in the proper condition to put into the forcing-pits.

It is in the structure and use of these pits that our mode of operations differs essentially from the usual practice in private establishments. The pits are from two and a half to three feet deep ; the sides are boarded up with spruce plank, which, if painted with coal tar, will last for fifteen or twenty years. The back board is allowed to rise nine or ten inches above the surface, the front board five or six inches ; this gives but a slight angle, but that we do not think any disadvantage. The width of the pit is six feet ; the most convenient length we find is about sixty feet, sufficient for

twenty sashes. The space allowed between the rows of pits for walking is four feet.

The manure when put in is made moderately firm to the depth of eighteen or twenty inches ; it is then covered to the depth of six inches with soil. When the soil indicates a "falling" temperature of 80 degrees, the lettuce is planted at about six inches apart, or about fifty plants in a sash ; with due attention to airing in fine weather, and covering up by straw mats at night, the salad is fit for market in six weeks from the time of planting, usually about the middle of February. This—the *first* crop—usually gives a return of about $2 50 per sash.

As soon as the crop is cut out, the soil is thrown off, and about six inches of hot manure is again thoroughly mixed through the now almost cold bed ; this in a day or two again enlivens the whole mass, when the bed is planted over again for the *second* crop. This is usually sold off by April 1st, and is generally very fine, averaging $3 a sash. The weather by this time is warm, and no further advantage is taken of the hot manure ; but the pits are again planted for the *third* crop, which comes in about May 1st ; this last is rather late, and does not give more than $1 50 per sash. The three crops thus give collectively $7 per sash.

The advantage we claim for using sunken pits for forcing, over making the hotbed on, or partly on, the surface, is two-fold : First, the saving of the heating material, as only the width of the sash is required, while by the "three-light frame" system you require to make the bed nearly one foot wider on each side than the sash or frame. Again, by the action of the cold on the exposed hotbed the heat is much sooner exhausted than when in the pit, which is comparatively free from such influence.

It would be somewhat difficult to get at all the items of expense in the matter. The manure is used for the out-door crops, and the labor is performed by hands that are used for other purposes ; but that the operation gives a fair profit, the best evidence is, that it is extended annually at an increase of nearly one-third, without diminution of prices. The growing of lettuce in *cold frames* is practised by us to a much greater extent, but as it may form the subject for some future communication, I need not further allude to it here.

[Mr. Henderson's experience as one of the most extensive and successful growers in the vicinity of New York gives special importance to his article. Our readers will no doubt be impatient to see his article on cold frames.—Ed.]

SMALL TREES *v.* LARGE ONES.

BY WILLIAM BACON, RICHMOND, MASS.

It is encouraging to see that the attention of fruit-growers has at last been diverted from the idea that a gain is to be realized from the purchase of "extra sized trees" at "extra high prices." Common sense and a very little experience ought to be enough to teach any one, that the purchase of such trees cannot be a very safe or very profitable investment, for the following reasons :

First, there is much more labor required and much greater risk attending the removal of such trees than of smaller ones. The roots of a healthy

tree extend in proportion to its age and the size of the top, so that a tree with a well-formed top may be supposed to have roots extending many feet beyond its circumference. To dig over all the soil they occupy in the careful manner it should be done, and take them all out uninjured, is a laborious service. Then the risk of removing such large roots without mutilation, is a hazardous one ; and the risk of life in a tree after removal, increases in ratio with the size of the tree. And, again, the cost of such trees in nursery, varies in proportion to their size from as much again to four or five times as much as that of younger trees, that can be removed with less difficulty and a better prospect of success.

The imaginary gain in the operation lies in the fact, that it is an "extra sized tree." Perhaps it is a bearing tree. It may have shown its fruit for one, two, or three seasons. It may be filled with fruit buds when this extra price is paid for it, and may bear, if it lives, in the year of its removal. And then, very likely, it will stop for a season of rest; or rather to give the tree an opportunity to regain its wasted energies, and acquire new roots in the place of the mutilated ones left in the soil of its nativity ; and while struggling to regain this loss, how liable to have disease creep in, and, in spite of a struggling effort between the cultivator and the tree, on one part, and the wrong it has had to submit to, on the other, to become a total loss. If this is not the case, circumstances are in favor of its having an injured constitution to battle with for a few years, and then it—poor, heart-smitten, and wronged thing—dies.

The root, we hold to be an important part of a tree ; and if once injured it cannot be repaired. Without it no tree can be firmly established in the soil. Nor can it have a healthful growth or thrifty head, unless the roots are perfect.

Suppose two trees, one of "extra size," with the amount of roots ordinarily taken with such trees, and one on the second or third year from the bud, carefully taken up, were set in the same soil and subject to the same treatment ; can any one doubt, that in ten years the small tree would far outstrip the larger one in growth, and would possess a healthfulness that the extra size would never know? Would not five years make the small one, at the beginning, the largest and best tree?

We once went with a friend to take up evergreens. He was anxious to take large ones, or those five or six feet high, and was accommodated. We took those from two to three feet high. Both parcels were planted at the same time, in soils equally favorable. Three-fourths of his died, the remainder dwarfed, while ours are now standing, beautifully tall trees, the admiration of all who look upon them.

Where the soil is favorable, we believe that trees almost universally succeed best when they remain where they spring up. Fruit-trees that are casually planted and grow by the sides of fences are much less liable to the invasion of insects than those stunted by frequent removals. Such trees usually have a good soil, made better yearly by the contributions of the winds that drive leaves and other decomposable matter, and lodge around them. Their thrifty growth and smooth bark seem to be somewhat a guarantee against insects and disease. Indeed, self-sowed trees in old fields where the soil is shallow, cold, and moist, will often flourish for a few years. In the end, they grow mossy, insects attack them, and they dwarf and die ; not because they have too much root, but from the fact that they have not enough soil.

To us, then, the secret of successful tree-growing lies, in the first place, in having a well-prepared soil, deep, well pulverized, and sufficiently dry to throw off all stagnant water. It is much easier to create necessary moisture by stirring the soil, than to get rid of more than is necessary. Into such a soil we would introduce our young trees as early as possible, with all the roots and fibres that promised life and activity, in the full belief, that every year they have passed before their final locating adds so much to the chances against their living, and actually goes to shorten the natural period allowed them for old age.

DESIGN FOR A RANGE OF GRAPE-HOUSES.

BY JOHN B. EATON, BUFFALO.

Among the many designs for horticultural structures which have appeared in your journal, I do not remember, Mr. Editor, to have seen one for a combined range of houses, intended to produce a succession of grapes from early summer to late autumn, or even winter.

It is my impression that wherever, in this country, grapes are cultivated with a view to such a result, it is usually done in detached houses. To this method, although it may have some advantages, there are many objections; not the least of which is, the necessity generally existing of providing a separate heating apparatus for each house to be warmed, which involves not only the very obvious additional labor, but I am convinced a greater expense in fuel, not to speak of the difference between the cost of one heating apparatus (whether boiler or furnace) and several.

With this conviction I send you drawings of such a range as I conceive to be well adapted to the object in view, not as being anything new in principle, but with the desire of calling the attention of commercial grape-growers, of which there are now so many, to a point which I think has been somewhat overlooked. My plans present a range of glass, twenty feet in width by one hundred and eighty feet in length, affording room for planting about two hundred and fifty vines in the borders, besides which a large number might be grown in boxes or pots. The range should, I conceive, be capable of furnishing a succession of ripe fruit from early in June until late in December, and, while constructed in a plain and inexpensive manner, would present an appearance not altogether devoid of beauty, or discreditable to any situation in which it might be placed. Its elegance would be materially increased by a moderate amount of ornamentation, which could be done at a small additional outlay; but it being, as now described, intended solely for commercial purposes, I have avoided all exclusively decorative work.

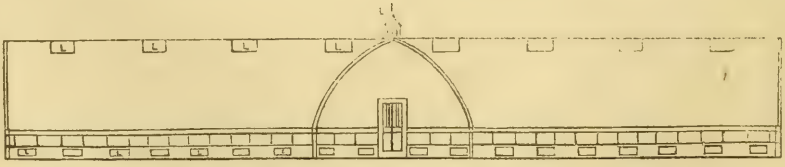


Fig. 1.

The drawings require little explanation. Fig. 1 is a front elevation, and Fig. 2 a ground-plan of the whole. Fig. 3 an elevation of either one of the ends, upon an enlarged scale. *A* is the forcing-house, heated by a double coil of pipe. *B* the succession-house, designed to follow the preceding in time of maturity, its fruit being in readiness when that in the forcing-house is out. This house being very slightly forwarded, requires but a single coil of pipe. Its fruit being just in advance of the general crop of cold-house grapes, I have given it a greater area than the other houses, with a view to its furnishing the largest part of the crop. *C* the cold-house, depending for

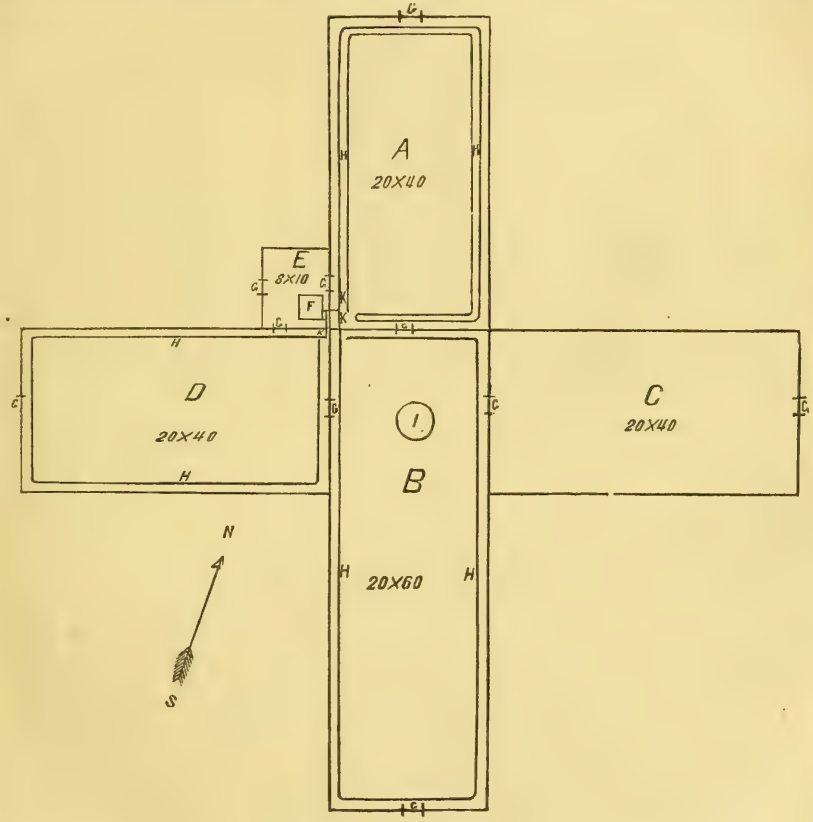


FIG. 2.

its warmth entirely upon the sun's rays. *D* the retarding-house, intended to commence ripening its fruit, as that in the cold-house is removed, and to preserve it upon the vines until well into the winter. It is heated by a single coil of pipe, which would doubtless be sufficient, except in a very cold or exposed locality. *E* the boiler-house, containing room for fuel, tools, &c., and affording entrance to the forcing and retarding-houses, at times when the severity of the weather may render it inexpedient to open

the outer doors. *F* the boiler, from which all the houses may be heated at once, or any one shut off at pleasure, by means of the stop-valves *K*. Rarely, if ever, would more than two houses require heat at the same time, and during a large part of the season, of course, no fire would be needed. *H* hot-water pipes. *G* doors. *I* cistern, receiving the water from the roofs, and furnished with a force-pump of sufficient power to thoroughly shower every part of the range. *L* ventilators, of which the lower ones are wooden shutters, hung from the top, and opening outwards, secured by a perforated rod of wood or iron ; the upper ones, glazed like the roof, are hung alter-

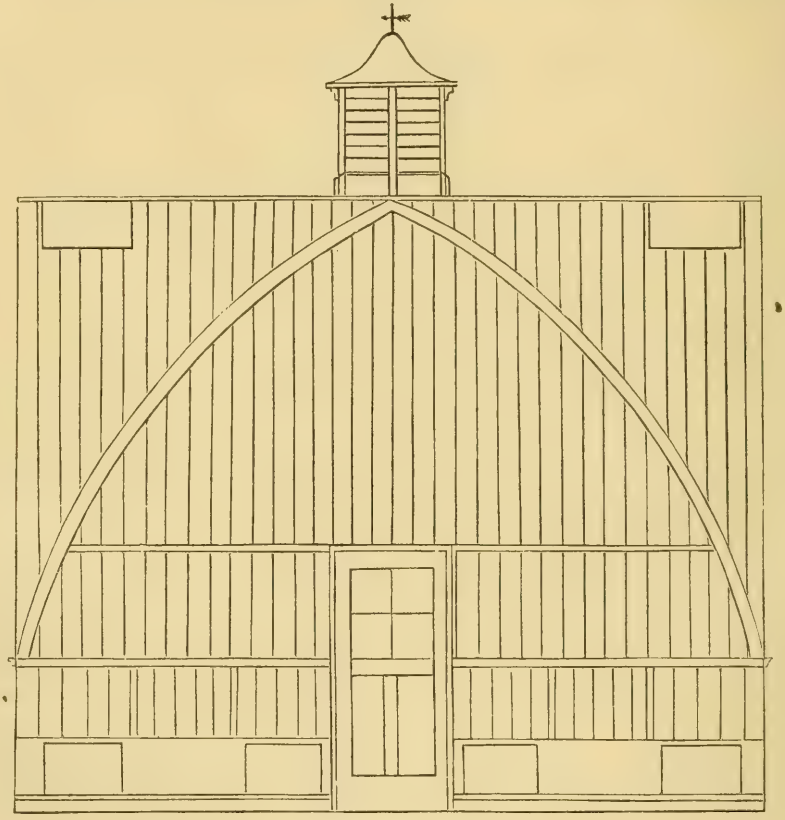


Fig. 3.

nately on each side of the ridge, and operated by means of a cord. The large ventilator at the intersection of the houses should be constructed with fixed blind-slats at the sides, so arranged as to prevent the entrance of water, with shutters in the bottom in the manner of a hot-air register, worked by a cord, or the upright sides may be swinging sashes, which I do not, however, like so well.

The houses are all of similar style and construction. *A*, *C*, and *D* are

each 20 by 40 feet, and *B* 20 by 60 feet in area. The side walls are 4 feet high, built upon posts, with 2 feet of wood-work, in which are the lower ventilators, and 2 feet of glass, either fixed or hanging sashes. The latter may be adopted, as affording more thorough ventilation, if desired, but I should prefer, if the lower ventilators were insufficient for the admission of the requisite quantity of air, to increase their number by placing one in each panel, instead of alternate ones, as in the elevations.

The roofs are curvilinear spars of 16 feet radius, and 16 feet in height to the apex. They are intended to be constructed in the manner which has been successfully practised here for some years, the rafters and bars being cut out with a *circular saw*. The rafters, which are placed about 10 feet apart, are sawed in segments, and two thicknesses firmly put together, by which great strength is secured, and the necessity of supporting columns entirely obviated. The roof bars are sawed in lengths of 4 to 6 feet, and are much stronger and less costly than is generally supposed. It may be thought by some greatly out of rule to place span-roofed houses at *C* and *D*, but I am satisfied that their many advantages more than counterbalance the partial deprivation of sun which the vines on the northerly sides would experience, and which would be somewhat greater than in a lean-to house of less width.

If it be desirable that the time of ripening should be nearly equalized through the whole house, it is not difficult to select earlier sorts for the northerly sides, which will naturally be retarded, until their maturity nearly corresponds with those in front; but I do not consider it a disadvantage to have the season of each sort prolonged by the different exposures, and think it quite feasible, by a judicious selection of varieties, to cause the north and south sides of those two houses to furnish as regular a succession of each sort as if they were grown in distinct apartments.

I should prefer to place the extremities of the range nearly, but not quite, opposite to the cardinal points, so that the front of *B* should face, say, south-south-east, or south-east by south. The most exposed ends I should glaze also upon the inside, the bars being rebated for the purpose on both sides. This double-glazing, as I know by experience, is of great advantage in windy weather, which is a much greater evil to contend with than a more intense degree of cold. With a still atmosphere, it saves a very considerable amount of fuel, and places the temperature much more under control. If the northern end of the forcing-house be very much exposed, I should be inclined to construct it entirely of wood, tightly battened.

In regard to glass, there are many different opinions, and novices are frequently at a loss how to decide between them. The heavy sheet or plate glass, whether plain, rolled, or enamelled, undoubtedly possesses superior advantages, but its much greater cost is a serious obstacle to its employment in such a structure as I am describing, in which economy is a material point. I have seen so many houses glazed, in a very satisfactory manner, with "double-thick" 7x9 and 8x10 glass, that I should not hesitate to use it in this instance. It is necessary to exercise great care in selecting the glass, as none but perfectly clear lights should be placed where they will receive the sun's rays, an apparently slight imperfection frequently causing much trouble by burning the foliage. The slightly imperfect ones will do no injury on the north side of the roofs, and those still more defective may be used for the upright portions, the south front, of course, excepted.

The superiority of hot water over every other method of heating is so generally conceded, that I should employ it, as a matter of course. There exists, however, a great diversity of opinion in regard to the merits of the numerous boilers extant, each manufacturer naturally claiming superior merit for his own pattern over every other. This subject I am not now prepared to open ; I should even hesitate a little before deciding upon one for myself, were such a decision requisite ; your readers will not, therefore, expect me to give an opinion for them. I do not believe that the perfection of a hot-water apparatus is yet reached, notwithstanding the real improvements which have been made within the past few years, but there are even now several very excellent boilers in use ; and some one who would make a thorough examination of their various merits, and give us the result, with the statistics, for comparison, would render a real service to the horticultural public.

CULTURE OF ERANTHEMUM PULCHELLUM.

BY DANIEL BARKER, HARTFORD, CONN.

Among the many old and beautiful flowering plants, which from some cause are almost neglected, except by here and there a devoted lover of old as well as new plants, the *Eranthemum pulchellum* holds a very high position.

It is generally treated as a stove plant, and but seldom seen in perfection. We have great pleasure in using our efforts to bring into notice this most beautiful plant, because it is, when properly treated, a most lovely and interesting object ; and more especially as it is one of a great number of good old plants which have been displaced by such as possess novelty, but in many instances little ornament.

During the month of March, or April, select some half-ripened wood as cuttings, placing them round the edge of a pot, in good sandy soil. Place the pots in a gentle hotbed. Soon as rooted, place them in pots according to the amount of roots, being careful not to over-pot them ; return them again to the hotbed. When they commence growing, pinch out their tops, when they will soon commence throwing out lateral shoots. They must be shifted again, as soon as the roots show themselves through the bottom of the pots, into pots two sizes larger than the ones in which they have been growing; and when the lateral shoots have made some three or four joints, these joints must also be taken off, when they will again throw out more laterals: by this means a handsome, bushy plant will be obtained, of from one foot to eighteen inches in height. This, under ordinary circumstances, will be about the beginning of June, when the plants must be removed to a cool frame, and plunged in old leaves or spent tanners' bark, protecting them from heavy storms of rain, and being careful not to supply them with too much water.

In this situation the shoots will become well matured, and the plant will become dormant early in the fall. They may be kept in the frame as long as there is no danger to be apprehended by frost. They should be removed a few at a time into the forcing-house, having been previously repotted into pots which will contain about half an inch of fresh soil around their roots. Supply liberally with water with frequent syringings overhead.

The result of this treatment will be beautifully-shaped plants, with four shoots, each of which will produce three lovely clusters of blue flowers.

The soil in which the Eranthemum flourishes is equal parts of good fibrous loam, sandy peat, and good rotten leaf mould.

There are but few plants the cultivation of which is more simple, and but few that are more beautiful ; and where forced flowers are in request during the winter months, but few more desirable.

[A well-timed effort on behalf of an old, but really beautiful plant. We hope Mr. Barker will continue his labors in this direction. Many of our "old worthies" are too much neglected.—Ed.]

THE VENTILATION OF HORTICULTURAL HOUSES.

BY WM. CHORLTON.

In approaching this important horticultural subject, it may be well to examine the outward bearings of the case ; and, in so doing, we must refer to the causes which govern the currents of air in the external atmosphere. When the air by which we are surrounded becomes heated, it expands, and is specifically lighter, in consequence of which it mounts upwards ; and the colder and denser air which surrounds the mass thus rarified, rushes in to supply its place. When the door of a heated apartment is thrown open a current of air is thereby immediately produced, the warm air from the apartment passing out at the top of the opening, and the cold air from the passage rushing in at the bottom, while in the middle it is stationary, or nearly enough so for all practical explanations. When the rays from the sun, by their reflection from the earth's surface, have heated or rarified a portion of the surrounding air, the air so rarified ascends into the higher regions of the atmosphere, and the colder air by which it was surrounded moves forward in a sensible current to fill the vacuity. From the above observations, then, it is readily understood, that the tendency of heated air is to fly upwards ; and, also, if there is free egress from the higher part of any ordinary glass structure, the inside temperature will be prevented from attaining to any considerably higher range than the external air ; while a rapid circulation will be secured by the drawing in of colder and denser air from the outside, through the laps of the glass, crevices, and jointings of even the best constructed house, without the necessity of opening any bottom ventilators.

"By far the larger number of gardeners attach great importance to preserving the power of ventilating their houses abundantly, without, perhaps, sufficiently considering the nature of the plants they have to manage ; and, as has been justly enough said, by supposing that plants require to be treated like man himself, they consult their own feelings rather than the principles of vegetable growth. There can be no doubt, however, that the effect of excessive ventilation is more frequently injurious than advantageous ; and that many houses, particularly hothouses, would be more skilfully managed, if the power of ventilation possessed by the gardener were much diminished.

"Animals require a continual renovation of the air that surrounds them, because they speedily render it impure by the carbonic acid given off, and

the oxygen abstracted by animal respiration. But the reverse is what happens to plants ; they exhale oxygen during the day, and inhale the carbonic acid of the atmosphere, thus depriving the latter of that which would render it unfit for the sustenance of the higher orders of the vegetable kingdom ; and, considering the manner in which glass-houses of all kinds are constructed, the buoyancy of the air in all heated houses would enable it to escape in sufficient quantity to renew itself as quickly as can be necessary for the maintenance of the healthy action of the organs of vegetable respiration. It, therefore, is improbable that the ventilation of houses in which plants grow is necessary to them, so far as respiration is concerned." —*Lindley's Theory of Horticulture, p.* 150.

It is now a well-known fact, that many plants will thrive better when confined in close glass cases than they would do with an abundance of fresh air, providing light is duly admitted ; and it is as fully demonstrated that light is more indispensable in general culture than a constant change of the atmosphere. Under the influence of this agent chemical action progresses, carbonic acid is decomposed, the oxygen is driven off, and the carbon retained, and, consequently, according to the deposit and amount of the latter, so will be the more or less solidity of vascular tissue in the plant, saccharine matter in the fruit, and corresponding concentration of growth. I have, in many instances, proved the truth of this reasoning in practice ; and we have also the testimony of the well-known authority Mr. Knight, in support of the same. He says, (Hort. Trans., ii., 225,) "It may be objected that plants do not thrive, and that the skins of grapes are thick, and other fruits are without flavor, in crowded forcing-houses ; but in these it is probably light, rather than a more rapid change of air, that is wanted. For, in a forcing-house which I have long devoted, almost exclusively, to experiments, I employ very little fire heat, and never give air till my grapes are nearly ripe, in the hottest and brightest weather, further than is just necessary to prevent the leaves being destroyed by excess of heat. Yet this mode of treatment does not at all lessen the flavor of the fruit, nor render the skins of the grapes thick ; on the contrary, their skins are always most remarkably thin, and very similar to those grapes which have ripened in the open air." Now, the entire exclusion of "fresh air" is not advocated here, neither would it be judicious during all periods of vegetable growth, and with all kinds of plants ; but such argument goes to prove, that in some cases it is absolute, and, under other circumstances, a continual flow is not required. The general expression, then, "Admit plenty of fresh air," demands some more tangible proof than the mere assertion, before the advice is acted upon ; and more particularly so, when we take into consideration the fickle and changeable climate we are working in, and where, we may say, we are often fighting the most adverse elements.

Nearly all the plants that are cultivated in glass structures are natives of more favored climes than ours; besides which, as in the case of forcing fruits, we have them in full activity at a time when, in a state of nature, they would be at rest; and out of doors, our most perverse wintry weather is in existence, which makes it self-evident that great caution is needed with regard to the admission of external influences. A few examples directly from nature, respecting the geographical peculiarities, though, perhaps, a slight digression, may serve to illustrate what is here meant. As all the plants which come from these different regions must be somewhat accommodated

accordingly, we have no other resource left than to suit their organism. All that has been said and written about acclimating, and all that may be in future attempted, will never change this ; and, further, all that we can gain is only a knowledge of how far the fixed organic structure of any plant is adaptable to our necessary artificial conveniences.

In the West Indies the mean average in the shade of different stations, extending from lat. 13° to 18°, is about 80° 55′, and the difference between the hottest and coldest months is not more than 5° or 6°. In the Indian Archipelago, almost under the equator, it is nearly the same, and the thermometer is never known to fall below 60° ; and so, comparatively, of other tropical countries. In addition to this uniform temperature, many of the plants from such regions are found growing in the woods and thickets, and are consequently less exposed to the fluctuations of weather, which renders them more susceptible to injury from sudden drafts of cold, or dry air. From the above we may infer that an even, genial, and somewhat moist atmosphere, ranging from 85° by day, with sunlight, and 60° to 70° at night, is suitable for stove-plants. Such in practice has always been the best and most successful with the writer, and all good plant-growers will testify to the same. A house where stove-plants are grown ought never to have a front ventilator opened, nor yet a door, excepting while it is necessary to pass through.

As we pass away, north or south, from the torrid zone, there is a corresponding difference of climate; it is more temperate, but the extremes of radiation and other circumstances become greater. In the tropics, however, the same conditions exist in the more elevated situations, the sides of exposed hills, and other like differences ; and these conditions, in progressive ratio, are also to be found in the temperate regions of which we now speak. Excepting the higher portions of the loftiest mountains, nearly all the plants which are indigenous to these adjoining latitudes, are, in cultivation, technically known as *greenhouse*. Here a freer circulation of air may be allowed with advantage. It requires, however, some experience, even in this case, to determine what amount of ventilation is most suitable for the various genera, and at what particular periods of growth and weather it ought to be freely given. This class of plants are not confined to narrow limits, they are spread over a vast geographical range ; but in no case are they able to bear many degrees of frost ; and while some are very impatient of extreme heat and dry air, and equally so as regards cold, there are others which, during the growing season, will bear with advantage the greatest heat and rarefication of the air that occurs in any country, and, when at rest, may be exposed to a lower temperature than the former mentioned, provided the growth is fully matured. Both may be considered as greenhouse plants, and are commonly accepted as such; but the bare mention of these different constitutional habits goes to show that ventilation ought to vary much in the respective treatment. These very opposite subjects are often congregated together in the same house, as a matter of necessity, and with tolerable success if the warmer and colder parts of the apartment be occupied according to the requirements of the inmates. For example, the upper part of any glass-house is generally warmer, while the lower is colder; and these two extremes are mentioned here to show that the evil consequences of bottom ventilation may be prevented at all times when the weather is unpropitious. The best growers of fruits, artificially, are well

aware of these facts, and are very cautious with regard to ventilation, knowing full well that upon this point the greater part of success depends.

To return more directly to our subject, let us take into consideration the general form of glass-houses, how the circulation of air is affected by ventilation and artificial heat, and what effect these have upon the vital action of plants. Whatever style of architecture we may adopt for these houses, it is only comparatively a modification of the common lean-to as respects the circulation of air within. There is always a roof overhead, which becomes one or more angles above the lower cube ; the heat, from whatever source it may be obtained, is always moving up into these higher parts, and, as glass is a good conductor, much of it is given off into the outside atmosphere. When we take into account, also, the immense number of small apertures by which the external air can enter from below, it is readily seen, that there is no such thing as a complete quiescence, and more particularly when the heating apparatus is working there must be a tolerably brisk movement going on, although the means for ventilation are closed. These conveniences for ventilation are generally arranged along the upper part of the roof, and in the upright front ; and, supposing they are all opened, the consequence is a quick escape of the heated air and moisture from above, and a violent rushing in of that which is denser, colder, and drier from the outside below, in extreme, or otherwise, according to the condition of the external atmosphere, increased in intensity by the partial vacuum which is being produced. So much is this the case, that the lower stratum of air in a glass-house may be rendered several degrees lower than the outside temperature in the middle of a hot summer day, and a most chilling draft when the weather is colder. If the air has been for some time, and still is, under the influence of artificial heat, these effects are augmented, not so much in degree as the less qualified state of the plants to bear such extremes. Plants are, in this respect, like animals, possessed with life, having perspiring, respiring, and circulating organs of great delicacy, and equally, or more, susceptible to injury, each and all being submissive to its own constitutional entailment ; and it behooves us to study how we may best adapt our care of them ; for, depend upon it, if we do not humor their peculiarities, they will give us neither pleasure nor profit. Let us stop for a moment to discuss the relative conditions. As stated above, our climate is extremely changeable ; one day hot and dry, the next cool and moist ; in summer we have often a torrid heat, and in winter a polar cold, with a frequent change of 30° to 40° in a few hours at any time of year. The plants we cultivate in glass-houses, either as fruits or for ornament, are either from the torrid zone, (where the extremes of temperature may be only 10° or 12° throughout the year,) or more uniformly mild regions than our own. The object of our artificial structures is, to furnish these subjects with a similar climate to that from which they were imported, and this, too, very often, during the continuance of our arctic winters. Is it not reasonable, then, to conclude, that the admission of such climatic fluctuations as are common to our continent must be nullifying our intentions, and paralyzing in the effects produced upon the plants ?

In making the above remarks, I do not wish it to be understood that fresh air or copious ventilation is invariably an evil ; far from it. Without a pure atmosphere no plant will flourish for any length of time ; neither will fruit

be of good quality, or flowers highly colored, or odorous; but I would caution all fruit and flower-growers against accepting the too common method of admitting bottom drafts, without a due consideration of the state of the external atmosphere, and also the stage of growth of the inmates. All that is needed in this respect is a suitable temperature and atmosphere, with abundance of light and a freedom from any noxious gases.

A few observations of a more mechanical character may be of service. We have seen, so far, that heat may be diffused through the whole cube of a house, but the tendency is to pass upwards, and out of the upper part of the roof; consequently there is a circulation of air in the interior, in proportion according to the influences at work. This, however, is not always in a direct perpendicular line, and even a cool bottom current may be produced without the aid of any ventilation. If we choose the common flue as an illustration, and consider it as placed on the ground level along the extreme front, the end nearest to the fire will be the hottest, and of course the radiated heat greater. In this case the opposite end close to the ground, at the back, will be the coldest and heaviest, and the air will move along the floor in a diverging diagonal stream, to take the place of that which is more rarified, the which will also travel in a contrary direction near the top. It will thus be seen that one part of a house so heated will be comparatively cold, while the other is warm. If hot-water pipes are laid in the same position, with one flow and one return, the warmth at both ends of the house is equalized, the current being direct with the plane of the roof, and the coldest part will be, in less extreme, along the ground level at the back. In both examples there is a disparity of temperature; but if in the former the flue were continued in return a short distance from the back, the heat would be more generally diffused through the whole atmosphere, and in the latter nearly equal in all parts, while a constant circulation is kept up by the draw from the outside.

There have been many mechanical contrivances introduced for ventilating glass-houses, intended to supersede the common lift-up, let-down, or sliding sash, all of which are more expensive than useful. The main principle involved in such inventions is, the opportunity for admitting air from a chamber above the roof, and also warming it before entering the house in front. The known necessity for such appliances goes to prove the evil of cold drafts, but there is no reason why they should be let into a house, if the ordinary ventilators are attended to in a sensible manner; consequently such machinery can be dispensed with. True, if no attention is given to the way in which the admission of air is performed, much injury may be, and often is done, and many of the complaints of shrivelled leaves, stagnation of growth, mildew, and other bad effects, have their origin in this cause. The object of ventilation ought always to be the maintaining a suitable temperature and atmosphere within, while sudden differences are avoided. If a house should happen to become too hot, it is not advisable to immediately throw open all the ventilators, even though otherwise such might be suitable, but to do so by degrees; because by such course the heat would pass off so rapidly as to produce a temporary vacuity, and an intense reduction of temperature, the which would condense the moisture previously in solution with the atmosphere, rendering it cold and dry immediately surrounding all surfaces of the plants that shortly before were being stimulated by opposite influences. Under such circumstances the juices undergoing assimilation in the leaves are

drawn out, a violently paralyzing effect is produced through the whole structure, a possibility of permanently reducing the vital energy, and the accompanying proneness to disease and premature death.

It is requisite also to keep, as near as possible, an equal temperature over all parts of a house when the ventilators are open, the which needs some caution. The wind may blow in a diagonal line over the roof, or it may pass longitudinally. In either case, if the openings are equal in extent on the whole length, a strong current will enter the inside at the opposite end, and a rolling, as it were, of a cold volume down to and along the lower base; and the warm air will be rapidly expelled at the windward point of the upper openings. Such being the case, it is best to reduce the openings, or keep closed, according to circumstances, at the leeward end, and thereby prevent the evil. Again, the wind may strike directly across the roof, which will require all the openings to be alike, but care is necessary here that it is not allowed to enter so as to produce a cold and chilling effect.

There are many other details of similar character to what is recorded, which only require a trifling observation in the operator, consequently they need not be mentioned; and I hope these few remarks may be of service to the amateur, for whose benefit they are penned.

[Mr. Chorlton has here touched upon a most important subject, and one but little understood. His article is too long for comment, but we can not let the occasion go by without endorsing the general principle here set forth. The extract from Knight is specially to the point, and contains good sound doctrine, which addresses itself with peculiar force to the good sense of the intelligent grower.—Ed.]

THE DIOSCOREA BATATAS.

BY F. HOLLICK, M. D., STATEN ISLAND.

The result of my fourth year's experience with the Dioscorea batatas is, that I am satisfied it may be made a profitable and desirable article of cultivation, at least for the *garden*.

On deeply dug grounds, with a medium supply of well-rotted stable manure, I have produced roots weighing six pounds, from one plant, and I think they may be made to *average* five pounds. Some of mine were planted one foot apart each way, and others only six inches apart one way by a foot the other. On the same soil I observed no difference in the product, but, on the contrary, I think those at *six inches* were the best.

I decidedly think that the plant was much weakened when we first had it, *constitutionally*, by having been so much *subdivided* to increase the quantity for *sale*. The largest roots I could raise at first were very small compared with those I can raise now, and it certainly has improved each year, as the part planted has been larger and better developed.

The number of axillary *tubers* has also increased, and they, too, have been *larger*. In fact, the number produced of these tubers is enormous. They cover the ground, and thousands have to be dug in, or left on the surface. They will, however, remain in the ground all winter and come up themselves quite thick in the spring.

These tubers will form good roots when planted the following year, but

not such large ones as those from other roots. The true plan seems to me to be this with them : To plant them quite thick, almost like seed, the following year after they are produced, and let them make *small roots*, which plant again the next year, say six inches by twelve, and they will then form fine roots of four to six pounds each.

When roots are planted it is best to lay them along the ground, horizontally, and just cover them over—at least mine did best that way. Next to whole roots, it is best to plant the thin ends of the largest roots, which are not good to cook.

I should perhaps remark here, that the product of every plant is not *one root*, but often two or three.

The larger the root is that is planted, the larger the product will be as a general rule. The planted root does not grow, nor does it rot away, but only shrinks up, and hardens. The earliest start and the best growth are made from the top of the root, on the tip end of the thin part.

It is now demonstrated that this root is perfectly hardy, even in very severe climates, and it will also *take care of itself*. Any part left in the ground will produce other roots the next year, and the little tubers formed above ground will do the same. In fact, numbers of these will *strike* and make roots as large as the little finger, by fall.

This root may, therefore, be planted on the western prairies, and all along the various *overland routes* to California. In all those plains and valleys, and even on the mountain slopes, I feel confident it would soon multiply, if once planted ; so that emigrants and others, who have to traverse those now *foodless* regions, could always depend upon it as a means of subsistence.

The importance of this, it seems to me, can scarcely be overrated, and I trust this brief allusion will call attention to it. The Federal government should see to this, and have the Dioscorea planted at the various military stations, and along the routes which the troops traverse. A single quart of the little tubers would *start* the plant over hundreds of miles, and then, as I before observed, it would take care of itself. Even on *sandy plains*, I have no doubt but it would attain at least an *eatable* size.

It would give me great pleasure to contribute my share of the tubers for this purpose, from my own stock, if any one will do the work.

Doubtless there are other wild regions in our country where a similar experiment could be tried, and if any gentleman feels desirous of trying it, I will send him the tubers with pleasure.

Those who wish to trace these experiments from the beginning, will find my previous articles in the back volumes of the HORTICULTURIST, and those in the city who would like to see the *roots*—as *seeing* is *believing*—will find specimens at Mr. Elliot's seed store, in John St.

[Dr. Hollick deserves much credit for the persistent manner in which he has carried out his experiments with the greatly abused Dioscorea. It is only by such experiments that its value, whatever it may be, can become fully known. We have never believed that it was destined to supersede the common Potato, but supposed, notwithstanding, that it might have some useful properties. There is one thing at least about it which makes us wish that it might be introduced into every garden, and the owner compelled to dig it out clean : the ground would thus get a "stirring up" greatly beneficial to it, and which, in nine cases out of ten, it would not get in any other

way. Dr. Hollick's suggestion, that the Dioscorea should be planted along our military routes, might very well be taken into consideration by our government ; though we can hardly hope for action on such a subject in that quarter.—Ed.]

ORNAMENTAL GRASS.

STIPA PENNATA—(FEATHER GRASS).



This Grass, so often found in the windows of our seedsmen's shops, is one of the most graceful of its tribe. It is among the grasses what the Bird of Paradise is among birds.

It is a perennial, with fibrous *roots ; leaves* in thick tufts, upright, long, narrow, sharp, rather rough, and dark green ; *sheaths* of leaves striated, very long, especially the uppermost one, which is also considerably swollen, inclosing the young head of flowers, rising above it when blooming, the leaf being bent back, pendulous, striated, and with edges turned inwards ; *stipules* oblong, blunt ; *panicle* or head of flowers on a stem about a foot high, erect, composed of six or seven flowers ; *calyx* of two nearly equal, spear-head shaped, concave, pointed valves, containing one floret ; *corolla* of two valves nearly equal in length, the outer valve spear-head shaped, edges turned in, slightly keeled, with a terminal, twisting, feathery *awn*, sometimes a foot long, jointed, and finally separable at the base ; inner valve much narrower, awnless, turned in at the edges, smooth. *Seed* cylindrical, pointed, loose, closely inclosed in the hardened outer valve of the corolla, which is very sharp, and barbed with bristles at the base, so that, after being borne through the air sustained by the long awn, when it alights upon the soil it there soon penetrates, and is retained by the barbs.

The beautiful and feathery appearance of the awns arises from their being thickly set with very fine, soft, whitish, semi-transparent, diverging hairs.

It is found on dry, mountain, rocky soils, and in such a situation was discovered about the year 1724, by Dr. Richardson, in company with Thomas Lawson, both good botanists, on the limestone rocks hanging over a little valley, called Long Sleadale, about six miles north of Kendal, in Westmore-

land. (Ray's *Synopsis*, 3d ed., p. 393.) No one has detected it there since, nor in any other part of the British Islands, and we fear that it no longer belongs to our native Flora. It blooms in August, and ripens its seed about the middle of September. It belongs to the *Triandria Digynia* class and order of the Linnæan system.

Mr. Sinclair says that he never could obtain plants from the seed of this grass when sown in the ordinary way on soils in open situations, and it may be owing to some peculiarity of this kind that it is now not to be found wild in this country. In pots and favorable positions the seeds vegetate very well. In many parts of Germany it grows naturally on Alpine or dry, sandy places much exposed to the sun.

Gerarde, more than two centuries since, says, "This elegant plant Clusius first observed to grow naturally in the mountain nigh to the baths of Baden in Germany. It is nourished for its beauty in sundry of our English gardens, and is worn by ladies and gentlewomen instead of a feather, the which it exquisitely resembles."

It is readily propagated by divison in the spring, and flourishes in an open situation and light soil, especially if the soil contains chalk, or has lime-rubbish mixed with it.— *Gardener's Chronicle.*

FRUITS OF DELAWARE.

BY DR. GEO. PEPPER NORRIS, NEW WILMINGTON, DEL.

Apples.—In the present pear excitement and grape mania we are neglecting our standard fruit. Notwithstanding all that has been said about the preservation of pears and grapes during winter months, experience proves that we are without any fruit except apples from December to June. Facts are stubborn things. No one will rejoice more than the writer when winter pears and native grapes are plenty in February, but until there is more prospect of it than at present, let us not neglect the universally respected apple.

Baldwin.—Although a native of Massachusetts, this is one of our most popular varieties ; a good bearer, and a fine-flavored apple. Ripe from November to March.

Caleb.—One of the best early sweet apples. A vigorous grower, and productive ; good for eating or cooking. Does well in this vicinity. August and September.

Early Harvest.—Another good early sweet apple ; a valuable fruit either for dessert or cooking. Does well in this vicinity. July and August.

Fallawater.—Under the *sobriquet* of "Fall de Walldes" this apple is known among our farmers. For general cultivation it deserves all that can be said in its favor ;—though not a first-class fruit for the table, yet its good size, appearance, fair flavor, and its great certainty of yield, entitle it to a position in the front rank. It is not so much the apple for the amateur as for the farmer, who wants an apple for general use—eating, cooking, paring, etc., etc. November to February.

Golden Russet.—A favorite variety, of golden russety hue. January to April.

Pennock.—Probably oftener met with in the Wilmington market than any

other variety; although its liability to bitter rot is compelling it to give way to better varieties. A native of Pennsylvania; large, deep, red apple, with a pleasant sweetish flavor; good for eating or cooking. November to March.

Smith's Cider.—A Pennsylvania apple; one of the most vigorous and productive varieties; greenish white, juicy, acid flavor. A profitable fruit. December to March.

Smokehouse.—One of the oldest and best known. Tree vigorous, and a great bearer; medium-sized fruit, yellowish, crisp, and acid; excellent for pies and cooking purposes generally. October to March.

Other favorite varieties are, Jefferies, (native of Chester county,) Lady Apple, Maiden's Blush, (New Jersey,) Rambo, (an excellent variety, and very popular in this neighborhood,) Summer Pearmain, (much esteemed in New Jersey,) Porter Roman Stem, (resembles Yellow Belle Fleur,) Strode's Birmingham, Tolman's Sweeting, and Vandevere, a native of this place; a fine apple for cooking, but subject to bitter rot, and, like Pennock, has been superseded by Smokehouse and other better varieties. Christiana originated in this neighborhood, and is ranked "very good." King of Tompkins County deserves a trial in this vicinity.

Trees should be selected of reliable nurserymen, by the purchaser in person, if possible, either in the autumn or early spring; fall planting is preferred here; forty feet apart is the usual distance. With good soil, proper situation, well-selected varieties of vigorous trees, and fair culture, the apple can hardly fail to become a remunerative crop.



TREE-MOVER.

The accompanying cut illustrates a very convenient contrivance for moving large trees, for the drawing of which we are indebted to a young friend. It is not a recent invention, but will probably be new to many of our readers. It almost explains itself. The truck is backed against the tree, the tongue thrown up against the body, and secured by stout cords. The earth is then removed from around the roots, the tongue pulled down by means of the rope attached to the end of the tongue, a team hitched fast, and the tree moved to its new quarters. The truck is placed over the hole in which the tree is to be planted, the tongue thrown up, and the tree is then in just the right position for filling in the earth. A truck of this kind would be very useful in planting parks and large grounds, and a small one would be useful for general purposes.

EDITORS TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, &c., intended for the perusal of the Editor, and packages by Express, should be directed to the care of C. M. Saxton, 25 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."

OUR present number will reach our readers in the midst of their spring preparations, a busy but joyous time for the gardener. We should be glad to know that we had done something to assist him in his labors. Some, no doubt, will have a portion of their labor to do over, for the ground is frozen hard again, and as we write our last lines it is snowing fast.—We have received complaints from some of our subscribers that they do not receive the magazine promptly. It is mailed here regularly, and the fault lies at the door of the post-office. We are now investigating the cause of miscarriage, and would like to hear from all our subscribers who do not receive the magazine in good season.—Again we have to lament the necessity for crowding out some very interesting matter, and our inability to answer a number of questions for want of room; the matter itself, however, will be none the worse for waiting, and it is just as well that our readers should know that we have some good things still in store for them.

SHADING GREENHOUSES.—Where plants, such as the Fuchsia, Gloxinia, Achimenes, &c., are kept under glass during summer, it becomes necessary to break the force of the sun's full rays, and this is frequently done in a slovenly manner. What is wanted in such cases is an elegant application, one easily applied and easily removed, and which will break off the sun's rays without making a heavy shade. We have been in the habit of using a mixture of whiting and linseed oil, which answers the purpose well. The following, translated from the *Revue Horticole*, would seem to be a good preparation, and we should be glad to have some of our readers try it, and report the result:

"Wheat flour slightly cooked in a small quantity of milk is to be reduced to a thin clear paste or jelly, and spread on the glass with a soft brush. This paste dries immediately, and forms a light layer, or fine membrane so to speak, which allows the transmission of a light, soft, continued, as strong as that through unpolished glass, to which it may be compared, and much less sombre and unequal than that through Spanish white during the absence of the sun. It resists rains and tempests as well as Spanish white, and is removed as easily by means of a rough brush and warm water."

THE SCUPPERNONG GRAPE.—Mr. McLean, writing from North Carolina, says: "I see a description of the Scuppernong, by Mr. Van Buren, of Georgia. It is a good description of a seedling, but not of the grape generally. He mistakes the origin of that fine grape. I may say something about it on gaining more information than I now have. We consider the Scuppernong and Bullus as original grapes; the first produces from seed both light and black grapes. The Bullus has never been known to produce the Scuppernong, not even the inferior seedling, which is easily told from the genuine grape by any one that has noticed them closely."



DIANTHUS CHINENSIS HEDDEWIGII.

A New Work on the Grape.—Messrs. Saxton, Barker & Co., have in press an elaborate work on the culture of the Grape, by Dr. Grant, of Iona. It will probably be the best book yet published on that subject.

Mr. Husman's Wine.—In speaking of this wine last month, we stated that it had become a little sour. Justice requires us to say that we have discovered a reason for it in the fact that the bottle had remained opened for a day or two near a hot fire, which would injure the best made article. We are still of opinion, however, that it is an excellent wine.

The Charlton Strawberry and Chorlton's Prolific, we are assured, are not one and the same thing. The former we do not know; the latter we do, and it is a good one.

The new Chinese Pinks.—Among the annuals recently introduced, the new Chinese Pinks promise to be among the most popular. We present our readers with a drawing of one of the new varieties, named *Dianthus Chinensis Heddewigii*, which, with a fuller description, was crowded out of the body of the magazine, and now very gracefully makes its appearance on our Table. We learn from our foreign files that we are indebted for this beautiful flower to M. Heddewig, of St. Petersburgh, who obtained it from Japan, and sent some of the seed to London, where it flowered in 1859. It closely resembles the old Chinese Pink, but is much superior in size and richness of coloring, embracing every conceivable hue of crimson, maroon, violet, rose, and white. "The markings of the individual flowers are strikingly beautiful; some have a centre of rich velvety crimson, shading off towards the edge of the petals with lighter crimson and rose; others, with a maroon centre, have the rest of the petals curiously marbled and blotched, while others are striped with various shades of rose, lake, pink, and white. This diversity of color, where several plants are grown together, forms a mass quite indescribable." This description is fully borne out by the beautiful colored drawing from which our engraving is taken. The flowers are three inches in diameter. The plant blooms freely, and grows about a foot high.

Closely allied to this is the *D. C. laciniatus*, which, however, grows two feet high, with flowers about four inches in diameter, each petal consisting of a long, delicate fringe, some double, others single. The colors are pure white, flesh, rose, various shades of red, carmine, violet, purple, and rich maroon, some being all of one color, and others striped and spotted.

Such are the new Chinese Pinks, as we find them described and colored. They are constant bloomers, and hardy, and we hope to see them in every garden.

Gishurst's Compound for Destroying Insects.—We have received a sample of this preparation from Mr. Bridgeman, 878 Broadway, N. Y., for trial. It is certainly effectual on the Green Fly and Red Spider, and we are led to believe, from what we know, and from the recommendations accompanying it, that it will destroy most of the insects which prey upon plants; probably all. We shall give it a thorough trial on all. We hope such of our readers as may try it will give us the result.

We made a brief visit to Jersey City a few days since, and stopped at Mr. John Henderson's, where we saw immense quantities of Fuchsias and Verbenas in the finest possible condition, these being his specialties. We then went round to Mr. Peter Henderson's, who grows Roses on a great scale. We saw probably not far from ten thousand Roses in pots, all in the best possible condition, and coming on finely for market. We have been promised some statistics on the "Rose trade" which will be interesting. We shall make more such visits soon.

The Comprehensive Farm Record. Prepared by Dr. F. B. Hough, of Albany, Superintendent of the New York State Census.—This is a well printed and ruled blank volume of 150 quarto pages, with an explanatory introduction and a series of carefully prepared headings,

arranged for entering every date and event pertaining to the farm, such as the result of each particular crop, and of each field, and every item useful for record and reference concerning domestic animals, &c. The book is ruled and arranged for entering the results of *twenty-five* years, from 1860 to 1884 inclusive. The need of such a book has long been felt; it will be of great service to the farmer, enabling him, almost at a glance, to ascertain the profit and loss of each and every operation of the farm. C. M. Saxton, Barker, & Co., No. 25 Park Row, New York. Price, in good substantial binding, $3; extra Russia, $5.

New Mode of Pruning Grape-vines.—Mr. Bizzell writes us that we do not seem to have understood the advantages of the new mode of pruning Grape-vines, as set forth in his letter in our March number. We have read that letter again very carefully, and find that we did not fully comprehend one point relating to this mode of pruning. We are still of the opinion, however, that only the first bunches set would ripen here at the north; its advantages, therefore, would be confined to the south. It would be well, however, to try the experiment under glass here, and we should feel obliged if Mr. B. would go more into detail, and illustrate the modus operandi with drawings.

The Nebraska Farmer.—This is a new candidate for public favor, which we take pleasure in commending. It is published monthly in the quarto form, (16 pages,) by Furnas & Lyanna, Brownville, Nebraska. The matter is varied and well made up. Terms, $1 per year.

"That Juice."—We are now quite satisfied, Mr. Heyser, where some of "that juice" has gone to. Our publisher is a very polite and considerate man, and passed the samples to our "sanctum." That in the "slim bottle" is a very fair article of its kind; but the other (we "spare you not") is not so good by ever so much.

Honolulu Nectarine Squash.—We have received from Mr. I. W. Briggs, of West Macedon, a sample of this remarkable Squash, and find it truly excellent. It is as good as sugar candy—and better! We have never before seen anything like it, and could readily imagine we were eating some carefully prepared confection. We shall take precious good care of the seed.

A Prize Essay.—The prize of $50 offered by the American Institute for the best essay on the culture of the Native Grape, has been awarded to Mr. Phin, of Rochester.

Grafting-Wax—We have received a sample of Grafting-Wax from F. Trowbridge & Co., New Haven, Conn. It is a great convenience to have ready made for use a good article of this kind, one that can be readily and neatly applied. This seems to be just such an article, and we mean to give it a trial. It may be had of Saxton, Barker, & Co., No. 25 Park Row, at 40 cents per pound.

A New Mode of Preparing Shellac.—Take one part of spirits of ammonia and eight of water. Heat in a glue-pot nearly to the boiling point, and drop in the shellac, a little at a time, as fast as it melts, till you have got it of the right consistencey, which may be known by spreading some on a piece of glass. Bottle it, and it is always fit for use. It may at any time be diluted with water if too thick. It is to be used on wounds caused by pruning, &c., and is best applied with a brush. We are indebted for the above to Mr. Hite, who has given it a thorough trial

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Dr. Tabor's Wine.—We have just tasted some wine made by Dr. Tabor, of Hennepin, Ill. It is a very good article, and he ought to feel encouraged to go on with its manufacture.

Some weeks ago we received a bottle of nice old Blackberry wine from somebody whose address we have mislaid. Who was it?

A HARD QUESTION.—"Can anything be done for saving the life of a hen when she has broken an egg in her?" asks one of our readers. How are we to know that such a catastrophe has happened? And what are we to do when we do know it? Give a dose of oil and apply one of Aunt Jemima's plasters? We give it up, and turn the subject over to some of our Shanghae friends for solution.

DR. KANE ROSE.—We have received from Mr. Pentland some specimens of this new Rose, with which we are greatly pleased. It is large and very double, being well filled in the centre. The color is sulphur yellow, and it is delightfully fragrant. We should deem it an acquisition.

SAINT PAUL (MIN.) HORTICULTURAL SOCIETY.—A Horticultural Society has been planted at Saint Paul in Minnesota. We hope it may grow up to be a great and flourishing institution in that far-off country, and produce much fruit. We are indebted to Mr. Buchanan, its President, for the proceedings which took place on the occasion, which we herewith print. The Constitution is a model for brevity.

At a meeting called by public notice, and held in the office of the County Auditor, for the purpose of forming a Horticultural Society for Saint Paul and vicinity, Alex. Buchanan was called to the Chair, and S. Hewson appointed Secretary.

On motion of L. M. Ford, and seconded by B. F. Hoyt, the following resolutions were adopted: *Resolved*, That in view of the importance of cultivating Fruit, Flowers, &c., in this State, and to aid in its support, we proceed to organize a Horticultural Society for Saint Paul and vicinity. *Resolved*, That a committee of three be appointed to draft a Constitution and By-Laws, and report at next meeting. The committee afterwards reported a Constitution, which was adopted, as follows:

CONSTITUTION.—*Article* 1. This Society is organized as the Horticultural Society of St. Paul and vicinity. *Art.* 2. The officers shall be a President, two Vice-Presidents, Secretary, Treasurer, and an Executive Committee of five. *Art.* 3. Regular meetings shall be held on the second Saturday in every month. *Art.* 4. The Annual meeting shall be held on the second Saturday of February. *Art.* 5. The payment of an admission fee of one dollar shall constitute a membership.

Officers were elected as follows: Alex. Buchanan, *President;* J. S. Prince, *1st Vice-President;* C. H. Schurmeier, *2d Vice-President;* Geo. Scatton, *Secretary;* J. W. M'Clung, *Treasurer;* L. M. Ford, H. L. Moss, T. M. Smith, M. D. Clark, S. Hewson, *Executive Committee.*

The Committee on the Constitution were instructed to report any alterations to the Constitution they may deem necessary.

The subject of "Strawberries" was selected for discussion at the next meeting.

Adjourned to the second Saturday in March, at the County Auditor's office.

S. HEWSON, Secretary.

THE thing that you want, Mr. McKnight, is the *Spergula pilifera.* You can get the seed of Bridgeman or Thorburn, New York, and probably others. Sow it lightly in shallow pots or boxes, under glass. In our next you shall have the rest of the information you ask for.

HENDERSON'S BOUQUET.—We have received two numbers of this splendid work from Mr. Geo. C. Thorburn, which we shall examine more carefully at our leisure.

IT will be seen by Mr. Barker's advertisement, that he purposes visiting Europe this spring, for the purpose of making collections of plants, &c. This presents a rare opportunity for gen-

tlemen who wish to add to their collections, since Mr. Barker's knowledge and good judgment will enable him to select judiciously.

CATALOGUES, &c., RECEIVED.

Bridgeman's Descriptive List of French Hybrid Gladiolus, and other Summer and Autumn Blooming Bulbs, supplementary to Catalogue No. 6. 878 Broadway, New York.—A very full list of these increasingly popular bulbs, embracing all the best kinds, with reliable descriptions of their characters.

Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, Roses, and Plants, cultivated and for sale at the Hermann Nursery, Hermann, Mo. Husmann & Manwaring, Proprietors.—A good, compact catalogue.

A Catalogue of Choice and Selected Flower Seeds, sold by E. G. Henderson & Son, Nurserymen, Seedsmen, and Florists to her Majesty the Queen. Also, a selected List of Agricultural and Vegetable Seeds, including all the leading and most approved varieties in cultivation. Wellington Road, St. John's Wood, London, N. W.—A compact, well arranged, and neatly printed Catalogue of 113 pages, embracing about everything worth having in the way of seed, both old and new.

Annual Circular of the Mount Vernon Iron Works. C. & J. Cooper, Proprietors, Mount Vernon, Ohio.—A catalogue of Saw-Mills, Sugar-Mills, Portable Engines, &c.

Descriptive Catalogue of Fruit and Ornamental Trees, Flowering Shrubs, Roses, Vines, and Creepers, Bedding-out Plants, &c., cultivated and for sale by F. Trowbridge & Co., proprietors, 103 Grand street, New Haven, Conn.—The contents of this catalogue are very choice.

John W. Adams's Catalogue of Flower-seeds, with brief Descriptions. Nursery and Greenhouses in Westbrook, on Forest Avenue, near Evergreen Cemetery and the Railroad station, two miles from Portland. Post-office address, Portland, Maine.—Contains all the leading old varieties, and many of the new ones.

Sanford's Circular for 1860. Agency for California Nurserymen, for the purchase of Goods and sale of Produce. Jason L. Sanford, San Francisco, Cal.

Descriptive Catalogue of the Rochester Commercial Nurseries, (established 1830.) H. E. Hooker & Co.—A very nicely printed Catalogue, embracing all the best varieties of Fruits, Ornamental Trees and Shrubs, Roses, &c.

Catalogue of Select Bedding Plants, Roses, Summer and Autumn Blooming Bulbs, and Herbaceous Plants, for sale at Bridgeman's Horticultural Establishment, Nos. 876 and 878 Broadway, New York. Nursery and Greenhouses, Astoria, L. I.—Contains a very good assortment of Dahlias, Verbenas, Petunias, Fuchsias, Scarlet Geraniums, &c. The collection of Herbaceous Plants is particularly choice and full.

Descriptive Catalogue of Fruit-Trees, Ornamental Trees, Shrubs, and Greenhouse Plants, cultivated and for sale by Hubbard and Davis, Detroit, Michigan.—Compact and good.

New List of Colored Plates of Fruits, Flowers, &c., (over 50 new plates added,) published and sold by D. M. Dewey, Agent, Rochester, N. Y.—We have never seen these plates, and can not speak of their merits.

List of valuable Ornamental Plants, cultivated by Negley & Co., Horticulturists, Pittsburgh, Pa.—Comprises a very choice assortment of Bedding Plants, including the best new kinds. Also, Phloxes, Fuchsias, Dahlias, &c., in good variety.

New Descriptive Catalogue of Fruit, Ornamental Trees, Vines, etc., cultivated and for sale by Cary, Peter, & Cary, at the Beargrass Nurseries, seven miles south-east of Louisville, near the Bardstown Turnpike, Kentucky.—Select, and neatly printed.

Descriptive Catalogue of Fruit and Ornamental Trees and Shrubs, Grape-Vines, Evergreens, Roses, Dahlias, Verbenas, and other Bedding Plants, &c., for sale at the Columbus

Nursery, by M. B. Bateman & Co., Columbus, Ohio.—A very fine and full collection of Trees, Shrubs, &c.

Swift's Improved Lawn Mowing Machine. H. N. Swift, Wiccapee Machine Works, Fishkill Landing, Dutchess Co., N. Y.—We have had several inquiries about Lawn Mowers. This is recommended by Mr. Sargent and others, and is said to be the best in use. The prices vary from $38 to $125.

Hansemond Sweet Potato Plants, for sale by C. B. Murray, Foster's Crossings, Warren County, Ohio.—This is among the best of Sweet Potatoes for northern planting, and has given much satisfaction.

Constitution and By-Laws of the Hamilton, C. W., Horticultural Society, established A. D. 1850, incorporated A. D. 1858, with the Tenth Annual Report, and the Prize Lists for 1860.—We judge from this that our Canadian brethren are progressing finely. We wish them every success.

Introductory Lecture to the Class of the Female Medical College of Pennsylvania, delivered at the Opening of the Tenth Annual Session, Oct. 19, 1859, by Ann Preston, M. D., Professor of Physiology and Hygiene. Published by the Lady Managers.—Woman has no equal in the sick-room, and there is a peculiar propriety in fitting her more fully, by education, for its duties, and in making her, in the true sense of the word, a physician.

The Journal of Rational Medicine.—Edited by C. H. Cleaveland, M. D., Cincinnati. Terms, $1 per year.

Correspondence.

The Maxatawny Grape.—We last month published a description of this new Grape by Dr. Brincklé. We have just received the following letter from Mr. Berckmans, which contains some interesting particulars in addition to those already published:

In the January number of this year, you mention the Maxatawny grape, and you ask if somebody can give you any information about that variety. I had supposed that some amateurs of Pennsylvania, acquainted with that fruit for the past three or four years, would have replied to your inquiry; but as I find no answer to the question in your just received number of this month. I venture to give you the little information I possess, by one year's experience; I do it because I think it the duty of every amateur of fruits to make known, as soon as possible,—that is, as soon as anything certain and reliable can be stated,—any variety that can add something to our pomological luxuries.

I tasted the fruit last season for the first time, and, through the kindness of a Philadelphia friend, I received a young vine in the same year, (1859).

I will first tell you about the vine before I mention the fruit, as I had that vine under my observation for a long time before I knew anything about the grape.

The layer I received was planted on high ground, not rich, but well sub-soiled, and started fairly about the middle of March. All the summer it grew with great vigor, and at the end of the season I believe that the different vines from that single small layer measured in extent over 60 feet; indeed, it took hold of all things standing within six feet distance, and overshadowed everything with its broad and profuse foliage. I consider it equal in vigor to our best southern growers, if not superior. Another summer will no doubt develop its full power of vegetation, the vine just out the ground being now four inches in circumference, strong and sound as a wild vine.

The foliage is very large, the outlines showing a foreign origin, while its downy cover under-

neath bears the unmistakable stamp of the American family. It is evidently a Hybrid from the Malaga, and, as such, giving promise of hardiness and adaptedness to our climate.

There can be no doubt that this excellent fruit will prove a first-rate grape for transportation. The Malaga grapes are sent all over Europe with perfect security. They are sold at exorbitant prices in St. Petersburgh, Russia, and are always kept, for a protracted season, in the best fruit stores of the large European cities.

I must think, and I am almost sure, that my vine is the first that has grown the other side of the so-called Southern division line; and I feel confident that I shall be able to test its merits fully in the coming season, when I shall also be able to send you the fruit as a test of its qualities and adaptedness for distant transportation.

I refer to my son for an accurate and technical description of leaves and fruit, as he has taken special notice of the growing vine and of the fruit sent to us in the latter part of September, 1859. He has deemed it worthy of large propagation, and I believe has potted every eye of the vines.

Bunches were received Sept. 28, 1859. Bunch medium, loose. Berries medium, oblong, greenish yellow, and transparent; have much water and some pulp; skin thin; flavor sweet, and partaking strongly of the Muscat grapes. Seeds large, and generally one in a berry. Its analogy with the Malaga le gros or jar grape of commerce, is very palpable, nearly the same fruit and same qualities for drying, as the berries will shrivel up, but will not rot. The wood is, however, very different, as its characters are unmistakably native. Yours, &c.,

L. E. BERCKMANS.

To the Editor of the Horticulturist:

SIR: Upon reading the description and recommendation of Orchard Houses, by Mr. Rivers, in the June, July, and August numbers of the HORTICULTURIST for 1859, I felt a desire to attempt something of the kind for myself, although conscious of ignorance, and fearful that the production of fruit from trees grown in flower-pots would prove scarcely practicable in unskilled hands. Taking the estimate of cost, as given by Mr. Rivers, and Americanized by Mr. Smith, I proposed to a builder with whom I had previously had some dealings, to erect for me an Orchard House, of the moderate dimensions given as a standard, which he agreed to do at the estimated cost, except as to the posts, which I was to furnish, to make up for the greater cost of glass in this country. (I had supposed that glass of the kind required would be cheaper in this country than in England, but found the contrary to be the case.)

I preferred the lean-to form, wishing to place the house against the south wall of a stable, which would afford important protection against the cold in winter and early spring. The arrangement of the building, and the composition of the borders, were, as nearly as possible, those recommended by Mr. Rivers; and about the first of November I procured the trees and vines, to the number of about thirty, (for a house thirty by twelve and a half feet,) not placing them in pots exactly, but principally in boxes and kegs, by the advice of a horticultural friend. After the thorough soaking prescribed by Mr. Rivers, I left the trees to themselves, as directed—not a leaf to be seen, of course. When the severe frosts came, I began to remember how much more inclement our climate is than that of England, and forthwith had the trees set close together, and well-covered with salt hay, by way of mulch. But thus far there has been absolutely no frost in the Orchard House; no cold or snow that we have yet had having brought the temperature down much below 40°. On the contrary, the thermometer there is so often above 60°, that I sometimes fear the trees will think it spring, and burst out prematurely into bud.

My object in mentioning this my first attempt, is, to ask information as to American experience of Orchard Houses, since, considering the differences of climate, English plans and successes are hardly satisfactory to beginners as unpractised as myself. If any of your subscribers, who have actually raised fine fruit on dwarf trees in an Orchard House, would kindly describe methods

and results in your pages, it would be a favor to me, and doubtless many others of your readers.

I am encouraged to ask this by the sudden and wide-spread celebrity into which the Orchard House has sprung of late. We meet it everywhere; and even the *London Quarterly Review* has thought it worth while to recommend to its readers, what it calls the raising of "fruit for the million," at small cost of money or trouble.

It is, of course, more important in England to learn special modes of bringing delicate fruits to perfection, than in our country, where glowing suns do so much work for us with such success. But the experience of late years shows that the early warmth and late frosts of our springs, together with the premature frosts of early autumn, disappoint, in too many cases, our best endeavors and highest hopes. It is to remedy these evils that we want Orchard Houses; and if protection can be thus cheaply afforded, assuring us always of *some* peaches fresh from the tree, *some* unstung apricots and nectarines, and a few well-grown figs, to say nothing of winter pears and sweet grapes, we may consider ourselves amply rewarded. But in truth this, like other horticultural attempts, brings with it its own reward, in health and pleasure.

Perth Amboy, N. J. Yours, LEAFRING.

[Can any of our readers give Leafring the desired information? We feel confident that the management of Orchard Houses in this country must be varied from that recommended by Rivers for England, and those building Orchard Houses would do well to bear this in mind. Leafring seems to have taken hold of the subject with so much intelligence and spirit, that we are fain to believe that he will be among the first to give the information for which he himself now asks. We sincerely wish we could help him. We can give him suggestions, but we have nothing in the way of experience on this subject to offer him.—ED.]

ED. OF THE HORTICULTURIST:—In your March number there is a very interesting article on Heating Apparatus for Horticultural buildings. Short, practical, common-sense remarks of this kind have a great influence on the advancement of Horticulture. Presuming they are chiefly intended for amateurs and those without experience in such matters, great care should be taken by the authors not to be too sanguine until public opinion justifies presumption, and new inventions have stood the test of time. On that account I would invite you, as part of your editorial duties, to call upon all those who have had practical experience during the past winter, to state *facts* as to the working of the combined Saddle and Conical Boiler; and whether it has always been found what he claims it to be when compared with the improved conical boiler. I have myself in use a number 5 conical boiler, heating thoroughly little short of 900 feet of 4-inch pipe, which, for steady action, economy in fuel, and easy management, will be hard to beat. Now let us hear from all others interested, by a general call, through your flourishing magazine, that we may be fully convinced which is the best. NOBODY.

["Nobody" is right on the "boiler subject," which the reader can take as a *double entendre* or not, as he pleases; at all events, let us now hear what "everybody" has to say. Being appealed to on the score of duty, we call upon our readers to "steam up," and put their boilers in order for a thorough test. The subject is a warm one, but we hope our friends will keep cool and give us an impartial record. Our remark last month referred to the old Cone Boiler, and not to the one figured, as we have had no opportunity of seeing that. We mean, however, to examine them all.—ED.]

DETROIT, *March* 12, 1860.

EDIT. HORTICULTURIST:—My Grapery is 15 by 20 feet. In the illustration, No. 7 should be supports and braces. I have had several letters inquiring as to size of house, and would be obliged if you would give it for the information of those interested. A house, constructed after this plan, 30 feet in length, could be built for five dollars per running foot. This house answers very well, but I would prefer to have it a little higher, and would put a tier of glass—say 10 by

15—under the plates upon each side, and dispense with the glazing around the north end. Your suggestion of Kyanizing the timber is a good one. In Boston they Burnettize the timbers used in constructing horse railroads. They use spruce timber, and say, thus prepared, it will last fifty years. The February number of the Horticulturist was not received here until last week. I am very glad you design making it more *practical;* it will benefit a larger class, and I think increase the circulation. Respectfully yours, &c., A. C. HUBBARD.

[We print Mr. Hubbard's letter for the benefit of those of our readers who desire information in regard to his plan of a greenhouse. We do not know why you got the February number so late. We have received a good many complaints from Detroit, and the magazine has been sent to many of our subscribers there three several times without having reached its destination. Can the postmaster at Detroit shed any light on this dark subject?—ED.]

A WALK THROUGH DR. GRANT'S PEAR ORCHARD.—We have received from Solon Robinson, Esq., some very interesting and instructive notes of a visit to Iona, the residence of Dr. Grant. On account of their length we have been compelled to divide them. The portion now given contains Dr. Grant's opinion of what he esteems the best twenty varieties of Pears, which will be useful and interesting to such of our readers as are about making selections. We begin with a "good idea."

"That is a good idea. Can you walk, talk, write, and hear me, all at once? If you can, take your pencil and make notes as we go along. We will take them somewhat in the order of their time of ripening."

A LIST OF TWENTY PEARS FOR CULTIVATION—THE CHOICE OF ONE HUNDRED.

First-rate early summer pears are scarce. Erhard's Seedling, which the Tribune named the "Ravenswood Pear," gives excellent promise, but it is not yet disseminated and proved in various localities, so we cannot now head the list with it. The only bearing tree is in the possession of Charles F. Erhard, Ravenswood, L. I., having been found by him in the woods, and brought home and planted in the garden; the fruit proves one of the earliest pears known, and is as delicious as the Seckel. In time we shall hear more of this chance seedling. But now we will proceed with Dr. Grant's list of twenty standard pears for general cultivation.

No. 1. *Doyenné d'Eté* is a well-known early pear, ripening in wheat-harvest, and earlier than the Madeleine. It is extra beautiful; color, crimson and orange, upon yellow ground.

No. 2. *Beurré Giffard.*—This follows closely upon No. 1, and is larger, and every way superior. In fact, it is an excellent pear, of medium size, and in color beautiful, being crimson shaded upon green and yellow ground.

No. 3. *The Tyson Pear.*—This ripens a little later than No. 2, and proves here at five years after planting an abundant bearer. The tree is very vigorous and healthy, and its general appearance would be highly ornamental if it bore no fruit, but, as it does, it must be a very valuable variety. The fruit is of medium to large size, sugary and delicious, colored crimson on an orange cheek.

No. 4. *The Bartlett Pear.*—This is a large-sized pear, of the true pear shape. Those now at hand measure three to four inches long and two and a half to three inches through, and this is about the fair average. The fruit, when ripe, is a dark green, with some brown spots. It should then be picked from the tree, and as it is hard, may be barrelled, and will bear transportation well. When mature it is pale yellow, and is very juicy and sweet, and much esteemed by the mass of people, though it is not considered by fruit connoiseurs a pear of first-rate flavor. We consider it one of the very best for general cultivation. The tree grows rapidly, bears early, and its tendency is to overbear, which must be guarded against by picking off the young pears. The Bartlett is a general favorite as a market pear, and sells wholesale at ten to fifteen dollars a barrel. It matures early in September.

No. 5. *Flemish Beauty.*—This ripens next in succession to the Bartlett, and is one of the most

beautiful trees in fruit that ever grew. Its growth is very vigorous and healthy, and it is a great bearer; fruit large, greenish, often with red and crimson blush, yellowing when mature, which is from September 1 to October 1. It is almost equal in flavor to the old Vergouleuse—rather more aromatic, and universally esteemed.

No. 6. *Doyenné Boussock.*—This follows No. 5 in ripening, and is in every way excellent; the fruit large and beautiful, being the old Vergouleuse twice magnified. The tree grows rapidly, vigorous and healthy, and is one that every one can afford to plant, and will delight to see grow and bear.

No. 7. *Beurré Bosc.*—This is a magnificent pear, ripening the last of September; color beautiful cinnamon russet, always producing a good fair crop, but is not disposed to overbear.

No. 8. *Bloodgood.*—This is a small-sized pear, of fine aromatic flavor, and in point of ripening it might have been placed next to No. 2. The tree is not a very vigorous grower, nor is it an early bearer, but a good one in making up an assortment.

No. 9. *Dearborn's Seedling.*—This also ripens about with No. 8, or a little later, and of late years, in some localities, has not been as healthy as formerly, and therefore not as much in favor. The fruit, however, is delicious, has a very refreshing vinous flavor, is of small size, but the trees in good condition are very productive.

No. 10. *Rostiezer.*—This also follows close upon No. 2 in maturing, and is very high-flavored, juicy, small size, though larger than the Seckel, and not unlike that pear, which by many is considered the standard of excellence. The Rostiezer is more vinous and less musky, and many prefer it to the Seckel.

No. 11. *Paradise d'Automne.*—Those who desire to produce table-pears of a fine, rich, vinous character, will find this exactly what they want. It is juicy, melting, sugary, vinous, aromatic, and ripens in September. Color beautiful cinnamon russet. Trees often come from the nursery rather small, and it is considered a hard kind to propagate, but hardy when full-grown.

No. 12. *Buffum.*—This is nearly a substitute for the old Vergouleuse, which, without some immediate remedy, is destined to extinction. This is not quite equal in texture to that old standard of excellence, yet the fruit is very high-flavored, of medium size, and when mature of a deep, rich golden color, shaded with crimson. As an ornamental tree the Buffum is unequalled by any of the pear family.

No. 13. *Stevens's Genesee.*—This is another fair representative of the Vergouleuse; though its texture is coarser, it is probably a seedling of that, and produces large-sized, beautiful fruit, of excellent flavor. The trees grow vigorously and healthy, and are generally much esteemed.

No. 14. *Urbaniste.*—This pear ripens in October, and may, with a little care, be kept till winter, and is often thought better than the Vergouleuse. It is counted a tardy bearer, only producing at six or eight years old, and often not till twelve. The fruit is large, often crimson and reddish shaded on rich yellow ground, so that it is truly beautiful.

No. 15. *The Seckel.*—This is generally esteemed one of the most delicious pears that grows. It is high-flavored, juicy, vinous, and through October and November, when in perfection, gives intense satisfaction to those who appreciate good fruit. The tree is hardy, an abundant bearer; fruit small, dark green, with a mingling of iron rust and brown; sometimes beautifully shaded with crimson and orange.

No. 16. *Oswego Beurré.*—This pear ripens in November, and will keep till January, and when perfectly matured is a most excellent variety; is sufficiently sugary, rich, vinous, and melting. The fruit is small, and so apple-shaped as sometimes to be mistaken. On the tree, the fruit has a singular appearance, often hanging in ropes, not unlike bunches of onions.

No. 17. *Lawrence.*—This is another November to January pear, of medium size and beautiful appearance, of fine lemon-color, and often a crimson and orange cheek when mature. It is rich in sweetness, sufficiently vinous, and very distinctly aromatic in flavor. The tree is not remarkably vigorous, though a fine healthy grower, and generally productive.

No. 18. *Beurré Clairgeau.*—This is an early winter pear; the fruit is very attractive in appearance, being of large size, sweet, buttery, vinous, though not always melting. It is richly shaded crimson and fawn, upon a beautiful light orange ground.

No. 19. *Lewis.*—This is another first-rate winter pear, when grown upon aged trees, and always productive, but upon young trees the fruit is often woody, and so is condemned without a fair trial. It is of medium size, and a good keeper.

No. 20. *Winter Nelis.*—This may be considered the standard of winter pears, and is perfect in January, when it is rich, sugary, vinous, and unsurpassed by any other at that season. The tree is a slow grower, and does not appear very vigorous; naturally low, with drooping, wiry branches; always productive.

As a substitute for either of the late autumn varieties named, we would recommend *Belle Lucrative*, as it combines a rare assemblage of excellent qualities; in fact, some think it is unequalled. It has a rich, sugary flavor, and ripens in October; and the tree is vigorous and healthy, and if not suffered to overbear, always productive.

The above are all standards, and not recommended for dwarfs, of which we give a list, as follows, of six of the best sorts.

A LIST OF SIX DWARF PEARS.

No. 1. *Louise Bonne de Jersey.*—Amateurs need not be frightened at this long French name, as they can drop all but the Louise, which they will find "bon," whether of Jersey or any other island. It is always good, and often excellent and beautiful, of large size, ripening late in autumn and keeping in winter. It is esteemed as a profitable market-pear, and the tree grows vigorously and bears profusely.

No. 2. *Duchesse d'Angoulême.*—This tree is vigorous and productive, the fruit large and fine flavored—probably the highest of all the large pears. The quality is so much esteemed that its ordinary market-price is $12 to $15 a hundred. It is one of the sorts that should be in every gentleman's garden.

No. 3. *Buerré Diel.*—This, in size and quality, is almost equal to No. 2, and is often more rich and highly aromatic in its flavor, but not generally as productive.

No. 4. *The Kirtland.*—This excellent pear originated in Ohio, and was named in honor of Prof. Kirtland, of Cleveland. It makes a vigorous, healthy tree, and the fruit is in perfection through September; often ripe by August 20. It is of good size; bergamot shape; cinnamon russet color all over; is rich and refreshing to the taste; nearly melting; vinous and sugary enough to suit all lovers of sweet, rich pears.

No. 5. *Vicar of Winkfield.*—This pear is in high favor at Boston, and it certainly grows vigorously here, and makes a beautiful, productive tree. The fruit is called good, or very good, and as it matures at a time when good pears are most wanted, is esteemed a valuable sort for garden culture.

No. 6. *Easter Buerré.*—The vigor and productiveness of this tree is not so fully ascertained as some that we have recommended, and until we find a sort that can equal or surpass it in its first-rate quality, both for late keeping and good eating, it must hold its first rank. At present it is difficult to name a substitute for it.

There, we think we have made a list that we don't claim to be perfect, but one that will be very valuable to a great many people who desire to make a good selection, but have not anything to judge from that is reliable, and free from self-interest that sometimes governs nurserymen, which induces them to recommend such sorts as they have in greatest abundance.

If any object that our descriptions are not scientifically or pomologically worded "according to the book," we reply, we had no book to word from. What we have written is made up from notes taken in the orchard, and from recollection of familiar conversations with one of the best pomologists in the country, and from a little knowledge of our own, particularly in judging of the vigor and productiveness of the trees; and with such as were in perfection at the times we

have visited Doctor Grant's orchard, we have given our own impression of the effect upon the palate. Of others, recommended by the doctor, we have the fullest confidence, because he knew that we intended to write out and print our notes, and we are sure that he would not willingly say a word to deceive. He is an enthusiast upon fruit culture, and it would be his greatest delight to see it so extended that every family in the country could have at least as good an assortment of pears as we have here recommended.

An account of his success in propagating grapes we must defer to another article, which we trust will be very instructive and interesting. SOLON ROBINSON.

GRAFTING GRAPE-VINES.—At this time, when the subject of the grafting of grape-vines is commencing to attract so much attention, and when the old process of inarching is being revived by our gardeners and amateurs, it becomes of consequence to the operator to know which sort of stock is best to graft upon, or to inarch upon, with the scions of his valuable new varieties, whether under glass or out of doors.

The influence of the stock upon the growth and fertility of the scion engrafted upon it, has been a subject so freely discussed, that perhaps my experience may seem commonplace enough to your readers. It is well enough known, that engrafted upon mountain ash stock, the pear ripens its fruit much earlier; that upon Paradise stock the apple is both earlier ripened and higher colored than when upon its own roots. All the modes and effects of tree grafting are getting to be pretty thoroughly understood by our more practical nurserymen.

That the grape-vine should be similarly affected in its growth, or productiveness, or earliness of ripening, is rather to be expected, and I hope that other gardeners will give their own experience in similar cases, that we may compare notes, and learn to emulate the success of some while avoiding the mistakes of others.

In the forcing-house and grapery which John Chorlton is managing for Joseph Hall, Esq., of Rochester, N. Y., it was decided to engraft upon one of the old stocks, a scion of the beautiful Bowood Muscat grape-vines, imported and grown by Messrs. Bissell & Salter. After free discussion as to which stock it was most advisable to use, the Prince Albert was chosen, and the result has shown the wisdom of the choice. The Prince Albert is a very free grower, and the growth of the scion partook of the strong growth of the stock. The scion was inserted 13th March, and on 9th August the Bowood Muscat vine, at six inches from the graft and midway between two buds, was two and five-eighths inches in circumference. The scion had been twice stopped in its growth, and now stands fully fifteen feet of fine bearing wood.

By grafting on Prince Albert, or kindred stocks, we get a much stronger growth than upon any of the Sweetwater; and we repeat, that the selection of the stock is a very important matter to those who are desirous of having early and fine specimens of those new English grapes the Muscat Hamburgh, Bowood Muscat, and Golden Hamburgh. P.

[" P." will find elsewhere in our present number a very interesting article on grafting the Grape. We hope others of our readers, as suggested by P., will furnish the results of their experience on this important subject, which should be much better known than it is, comparatively few being even yet aware that the grape can be grafted at all. The case mentioned above shows strikingly its advantages.—ED.]

DWARF PEARS—DEEP PLANTING.—The article under this caption, Mr. Editor, in your February number, would, at first sight, appear to inculcate a doctrine greatly at variance with the practice of the most scientific and successful cultivators in the country, but, as I will endeavor to explain, you admit, in effect, the correctness of the *theory*, and, as I understand you, object to the *practice itself* in peculiar cases only.

You admit that "the true theory in planting Dwarf Pears is, to set them up to the point of junction *when the trees are worked low*, but otherwise to plant them as they stood in the nursery."

Permit me to examine the premises upon which you found the latter clause of your recommendation.

Deep planting, in the abstract, is, without doubt, one of the most serious, and, at the same time, one of the most common evils with which transplanted trees are forced to contend; and with your remarks upon this point in regard to trees in general, I fully concur. All reason is contrary to the practice, yet it is so much less trouble to set a tree upon the bottom of a hole prepared for it, without regard to the surface of the ground, than to make the calculation necessary to bring the tree to its proper level after the earth has settled, that I have found the greatest difficulty in inducing even good and careful workmen to plant trees as I wished, without personally superintending the operation; and I have even, in some cases, obliged them to take up and re-plant trees which were too deeply set, before I succeeded in having them placed as I directed.

The principle, in general, is too well established to require argument: respecting Dwarf Pears in particular, I think that the same *principle* holds good, but the *practice* requires, in some cases, slight modification.

Your opinion, Mr. Editor, would appear to be chiefly grounded upon your experience with trees obtained "many years ago," and "worked from fifteen to twenty inches high." I see nothing remarkable, or adverse to the usual practice of planting "up to the junction of the Quince and Pear," in the fact, that these trees, when so planted, refused to live and grow. I should consider it *more* wonderful if they had consented to do so. What tree *would* live for any length of time with twenty inches of its stem below the surface? No fruit-tree, certainly, that I am conversant with. I have observed several instances in this city, where a large proportion of the streets are planted with maples and elms, in which even these hardy trees—well established, and frequently of large size—have been destroyed by the "filling-in" rendered necessary by an alteration in the grade of the streets. And I had the satisfaction, a few years since, of rescuing a fine oak, of considerable size, from a like fate, by recommending to its proprietor the expediency of removing a portion of the mass of earth which had been placed upon its roots, which he did, in the form of a large concavity, to the manifest injury of his small inclosure, but the preservation of his valuable tree.

The truth of the matter is, simply, that a Dwarf Pear "worked at twenty inches" from the ground is totally unfit for planting in any manner, or under any circumstances, unless, indeed, it were the last of its race; and I am very much mistaken if any "leading nurseryman" would, nowadays, acknowledge that he grew any such trees. "When we first planted Dwarf Pears" the case was very different, and their culture and propagation were alike misunderstood. Instances are not yet extinct of the practice, then quite common, of growing dwarf trees in standard form, all the lower branches being persistently pruned away.

I was once so unfortunate as to be interested in a lot of imported trees, of the greater part of which the heads were as high as my own—some, indeed, higher. The worst of the matter was, that most of them being double-worked at standard height, pruning them down was an impossibility. And these trees were exported not many years since either, by a nurseryman who has undoubtedly sent more trees to this country than any other in France.

Now that dwarf culture is better understood, the stocks are worked as near as possible to the ground, rarely exceeding six inches above it. (Indeed, it would be difficult to work a Quince stock of the usual size at twenty inches.) Worked in this manner, the practice of planting at the junction is unquestionably the correct one. The Quince has been proved to possess a peculiar aptitude for emitting roots from the few inches of stem which was formerly above the surface; and it being generally a plant of but three or four years' growth from the cutting, the reasons which are in general valid against planting a tree more deeply than it formerly stood, do not in this case apply with equal force.

A dwarf of proper age for removal will usually be found well furnished with roots, especially

near the surface. If not previously root-pruned, there may, very probably, be from ten to twelve inches—possibly more—of stem, constituting the lower end of the cutting below the surface. A portion of this is worse than useless to the tree in the end, even if it is of some slight present benefit. Being so far below the influence of the sun and atmosphere, as they necessarily will if the tree is planted properly in other respects, the lower roots, if not in a peculiarly dry soil, will shortly decay, (as you found to be the case, Mr. Editor, with your own trees,) and endanger, if not destroy, the life of the tree.

By amputating the stem at six or eight inches below the surface, a sufficient number of roots will generally be left to support the tree, if the branches have been properly reduced; and if then planted at the junction, new roots will almost invariably be emitted up to that point. In this way the roots are kept near the surface, where they are most needed, the health of the tree is enhanced, and any subsequent removal rendered much more feasible.

A by no means unimportant point in thus burying the stock, is its protection by that means from the borer, which, if ever so little of the Quince is above ground, will be very apt, and in some locations quite certain, to discover the fact, and effect a lodgment. Many failures which are attributed to other causes are undoubtedly owing, in reality, to the depredations of this insect; for, having once effected an entrance, he labors in safety from any but the most careful examination, the perforations, when near the surface, and the inconsiderable excretions, being, perhaps, concealed from a passing glance, by the swelling commonly arising at the union of the Pear and Quince.

It is somewhat singular that, while the insect rarely perforates the *bark* of the Pear, he is by no means averse to preying upon its *wood*, after he has safely reached the interior of the stem through the Quince. Working directly upward, he, in some cases, as I have discovered in amputating in order to graft, reaches a point five feet or more from the ground. How are we to attack an enemy thus securely entrenched? I scarcely think that either the "barbed wire," which is frequently effectual, or any other generally known remedy, would apply to such a case.

JNO. B. EATON.

[We are glad Mr. Eaton took a second sight at our Pear article, and got at our real meaning, for we should be sorry to be classed among any but those who go in for improved culture. In most respects he confirms the points we made. We regard deep planting in the abstract and in all respects a great evil, and can not perceive why an exception should be made in favor of the Dwarf Pear. If there is any good reason for it, we have yet to be convinced. We know that the Quince will throw out roots from the stock when buried in the ground, and so stated; but this can hardly be used as a legitimate argument in favor of deep planting, when we know that while these new roots are being made, the tree often becomes diseased and dies.

Mr. Eaton is quite mistaken in supposing our opinions are chiefly based upon our experience with trees obtained "many years ago." We cited that case as a matter of convenience, but stated that we had frequently seen it verified since; and though he wonders at it, he almost immediately cites an analogous case himself. Now we will state, for Mr. Eaton's information, that since "many years ago," we have planted many hundreds of Dwarf Pears, and have seen thousands more on the grounds of our friends; we have been a somewhat close observer, and have seen very many such cases as we speak of in our Pear article. From experiments which we have made with some of these, we have no doubt at all that, in the majority of cases, deep planting was the chief cause of the diseased condition of the trees. We have already stated that we prefer to plant up to the "junction" when it can be *properly* done, because we think the Dwarf Pear is longer lived when thus planted; but we can not ignore the fact, that the Dwarf Pear will grow vigorously and produce abundant crops of fine fruit with the quince stock several inches out of ground. The pears that for several years past have taken most of the first prizes for specimens at our Horticultural exhibitions in New York, were grown on trees with from two to six inches of the quince stock above ground; and this is not a singu-

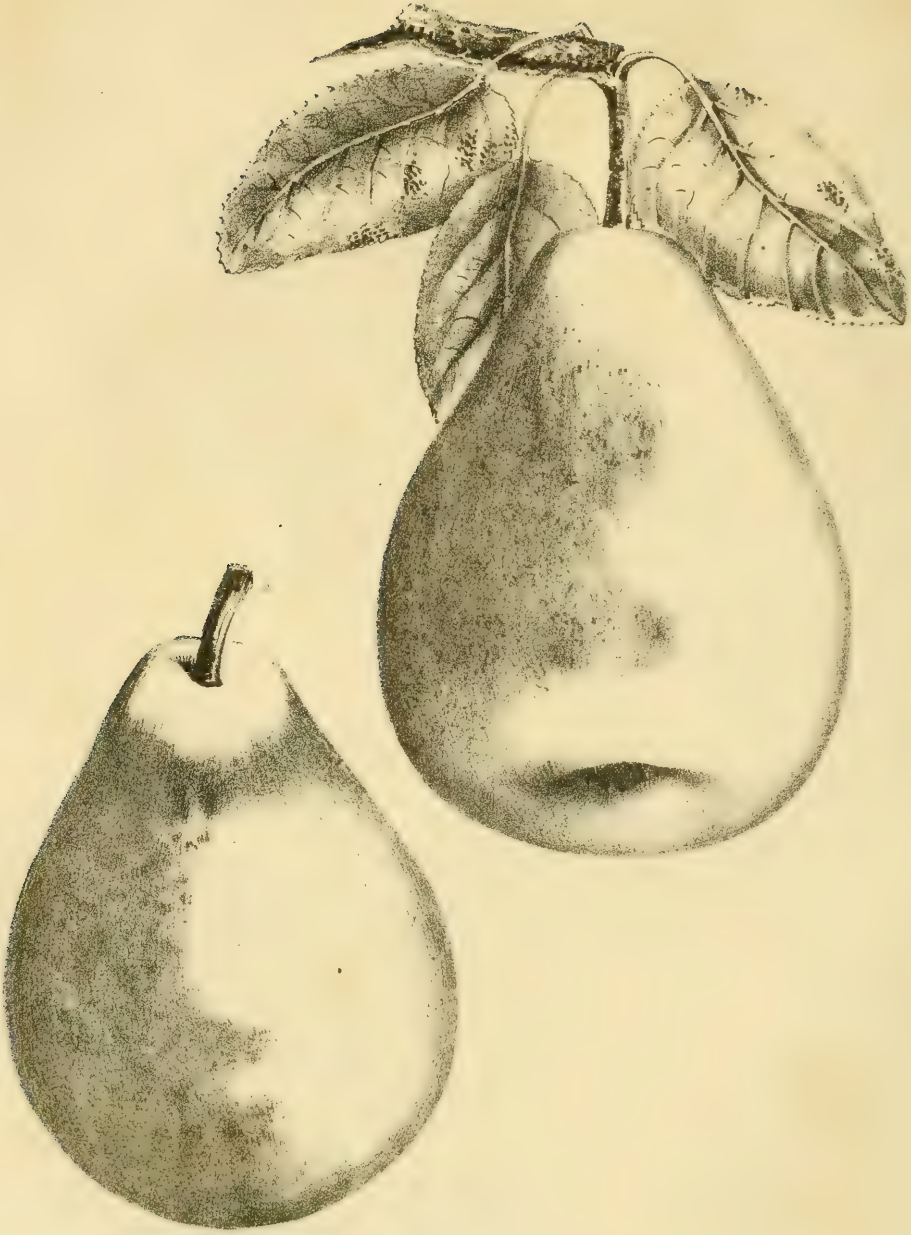
lar instance. We say nothing here about culture; we simply allude to facts within our knowledge; and it is because of such facts that we recommend Dwarf Pears to be planted as they stood in the nursery when they are worked too high to be *properly* planted up to the "junction." In deep planting, the chance of success decreases with the age of the tree.

Mr. Eaton seems to think that high-worked trees are not now to be found; but in this he is wrong. We already have an acknowledgment from one large grower, that he is "convinced he works his trees too high." We do not say, or intimate in any way whatever, that leading and intelligent nurserymen now work their trees fifteen or twenty inches high; we know many of them, and are familiar with their stock, and readily admit that their Pears are mostly worked at what may be called a reasonable height; but we do say, of our own personal knowledge, broadly, flatly, and emphatically, that hundreds and hundreds of trees, worked from six to twelve inches high, are annually sold; they are planted deep, often fail, and throw discredit on Dwarf Pear culture. That is all plain enough to us; and we can not help thinking, in view of our own experience, and all we have heard on the subject *pro* and *con*, that the success of Dwarf Pear culture would have been immensely greater if trees had never been worked more than two or three inches high; reasonable success, however, ought to be met with when they are worked even four or five. In our second article on Dwarf Pears, we have named five inches as the maximum height; we at first wrote it lower, and are almost sorry we altered it. What we wish is simply this: that in recommending the planting of Dwarf Pears, a caution shall be added in the case of high-worked trees. This we conceive to be reasonable and proper. It may not be necessary in the case of Mr. Eaton or the Editor of the HORTICULTURIST, but it is in the cases of thousands of others.—ED.]

Editor's Drawer.

IMPORTANT SALE OF PLANTS AT COOPER'S HILL, ENGLEFIELD GREEN.—The first portion of a magnificent collection of Azaleas, and other stove and greenhouse plants, was recently brought to the hammer here by Mr. Stevens. Of Azaleas, Glory of Sunning Hill, 3 feet 6 inches high, and as much through, fetched 11*l.*; Murrayana, 9*l.*; Perryana, 7*l.* 10*s.*; optima, 6*l.* 10*s.*; Gledstanesi, 5*l.* 15*s.*; variegata, 5*l.*; lateritia, 5*l.* 5*s.*; alba magna, 5*l.* 15*s.*; sinensis, 5*l.*; and other lots from 2*l.* 2*s.* to 3*l.* 10*s.* Of other plants, Acrophyllum venosum, 3 feet high and about as much through, fetched 7*l.* 10*s.*; the Willow-leaved Ixora, 6*l.*; Genetyllis macrostegia, 5*l.* 10*s.*; Aphelexis macrantha rosea, one of the finest plants in the country, 9*l.*; A. m. purpurea, 5*l.* 10*s.*; A. m. grandiflora, 4*l.* 15*s.*; Rondeletia speciosa, 4*l.* 10*s.*; Tetratheca ericoides, 3*l.* 7*s.* 6*d.*; Erica jubata, 2*l.* 4*s.*; Maranta zebrina, 2*l.* 10*s.*; Pandanus javanicus variegatus, 3*l.* 10*s.*; Epacris miniata grandiflora, 3*l.* 10*s.*; E. m. splendens, 2*l.* 6*s.*; Pimelea mirabilis, 2*l.*; P. Hendersoni, 2*l.* 6*s.*; Eriostemon buxifolium, 2*l.* 2*s.*: and Adenandra speciosa, 2*l.* 6*s.* Other lots, of which there were in all 202, fetched from 10*s.* to 30*s.* per lot; and the produce of the whole sale amounted to upwards of 300*l.*—*Cottage Gardener.*

RANSOME'S PATENT STONE.—It is said that specimens of this material have been exposed to the weather for twelve years without the least appearance of decay or deterioration. From what has been stated it will be evident that the patentee, by varying the fineness or coarseness of his sand, has the power of producing all varieties of artificial stone, from fine sandstone to the coarser millstone grit. In short, the uses and modes of applying this stone are endless. We have statuary of it, vases of elegant shape, kerb stones, fountains, and a variety of other objects, all of an ornamental character, for which it is well suited. Austin & Seeley's flower baskets, tazzas, and vases are beautiful works of art, especially the former, some of which are of unusual size. Having been filled with flowers and placed on one of the broad gravel walks, they produced a singularly rich effect. One or two light-looking handsome vases, and other decorative objects made of cast-iron painted cream-color, are in use.



NEGLEY PEAR.

for THE HORTICULTURIST,

Published by C. M. SAXTON, New-York.

Graperies for Amateurs.

THERE is probably not an individual in the horticultural community whose feelings at this moment are not more or less imbued with the enthusiasm prevalent on the subject of Grapes ; it amounts, in fact, almost to a *furor*, and is by no means confined to those who make Grape culture a specialty. All classes seem to be setting in with the general current, and we are glad that it is so. We can perceive wherein much good will result from it, not the least important of which will be a higher standard of excellence in the Grape itself, improved modes of culture, and a vast improvement in the public taste. Old varieties will give place to new and better ones, and the prejudices of the few whose minds can conceive of nothing more refined than a "fox," will be swept away like straws. Thus far, we can see no occasion for saying one word to check this spreading enthusiasm ; it is doing a good work, and, up to a certain point, we mean to encourage it. When that point is reached, we shall have something to say.

Our present object, however, is to take advantage of the prevalent enthusiasm, and direct a portion of it to a particular point, and open up a source of enjoyment to the amateur, which has hitherto been thought to be beyond his reach. We here use the word *amateur* as meaning one who, without reference to riches or the want of them, mainly cultivates his plants with his own hands ; and this is the only meaning the word ever should have among horticulturists. When we say, therefore, with this definition before us, that we propose to open up a source of enjoyment to the amateur which has hitherto been thought to be beyond his reach, we simply mean ,that in the one case the cost has been thought to be beyond the means of a man in moderate circumstances, and in the other the labor greater than a rich man would be willing to undertake. Both these positions involve palpable fallacies, as will presently be seen. Let us state, however, more particularly, the classes whom we would include in our remarks. There are men in moderate circumstances who can not afford to keep a gardener, but who would gladly indulge their taste in this way, provided it could be done at a moderate cost. There are men of considerable wealth, on the other hand, who need physical recreation and amusement, and who would seek it in this way, provided it were not too exacting and laborious. These are the persons to whom we would chiefly address our remarks, though there are others on the confines of both classes to whom they would be quite as applicable. We have no desire to indulge in imaginary speculations, or to mislead by placing too low an estimate on the labor and expense necessary to secure a fair and reasonable success ; we have not, therefore, depended entirely upon our own experience, but have sought information among our amateur friends, all going, however, to confirm the conclusions at which we had already arrived. We are thus enabled to state, for the benefit of those who desire to embark in the culture of grapes under glass, with the views before indicated, that they may freely do so without any misgivings as to the amount of labor and

cost, or the degree of pleasure to be derived from it. Among those thus engaged, there is a great unanimity of opinion on all these points. To be a little more precise, let us take the example of a house 10 by 30 feet. A plain, substantial house of these dimensions, if erected against another building, can be built for about $150 ; and it will be as good, for all practical purposes, as one costing $500. A man who has the means can make a grapery cost almost any sum he pleases, and the cost is often increased at the sacrifice of real utility. The beauty of a glass structure of any kind should consist mainly in the objects which are grown in it, and not in mere external ornamentation ; an excess of the latter, indeed, often renders the former wholly unattainable. But to return to details. A large item in the way of expense can be saved by making the borders on the inside of the house ; and this plan should be adopted, not alone because it is cheaper, but because it is also better than an outside border. We have tried it for many years, and know it to be so. It has the advantage, too, of enabling us to erect graperies in positions where otherwise we could not have them ; and if the plan were generally adopted, there is no reason why graperies should not become as common in the midst of our great cities as they now are in our suburbs.

But we shall probably be told that the great demand of time and labor incident to the care of a grapery, involving, as it does, no inconsiderable knowledge and study, will prove a fatal drawback to the amateur, even though we should reduce the item of expense within his means. The objection has force, and we are by no means inclined to underrate it ; but we know that it has been very much over-estimated. Many amateurs already have sufficient knowledge to insure to them a good degree of success, and the intelligence and good sense generally possessed by this class of persons, render the attainment of knowledge on this subject both an easy and a pleasant undertaking. This knowledge once attained, the labor of taking care of a small grapery is reduced within moderate limits. Let us, for example, take a house of the size above named, and include all the operations incident to growing a crop of grapes, such as watering, pruning, thinning, &c., &c. If the growing season be taken, the average time required will not exceed *one hour a day;* and this one hour need not necessarily be given all at one time, but may be divided between morning and night. Now there are very few persons who can not spare this small amount of time from their necessary business avocations, and who, in fact, do not daily waste much more in a manner which affords them neither pleasure nor profit. The work to be done, with the single exception of watering, is not laborious, but, on the contrary, mostly light and pleasant. With the help of a man at the pump, the labor of watering becomes comparatively easy ; and with the accessory of an elevated tank, or where a supply like the Croton can be had, it is reduced to mere play.

The above are the chief obstacles to be encountered by the amateur grape-grower, and his intelligence will place them under easy control. We shall probably be told of the importance of ventilation, and that this can not be attended to while one is absent at his business. The simple fact is, that a good deal too much ventilation is done in graperies ; the little attention that may at times be needed during mid-day can easily be rendered by almost any member of the family. The ventilators can be so set in the morning as to seldom need alteration during the day, as we shall fully explain here-

after, when presenting our plans. The chief point is moisture, and this is the great desideratum which the amateur will have to provide for. But this also is within his control, and thus there is no real obstacle to the amateur indulging his taste to the utmost of his time and means.

We have said nothing of the *pleasure* to be derived from the care of a grapery, but we must here confess that this very thing was our chief inducement in writing this article. What we have enjoyed in that way we would gladly place within the reach of all our readers. We love a fine lawn; we love stately trees and flowering shrubs; we love a beautiful flower-garden; so also we love a choice orchard of apples and pears; and we love all these things more than most people love them; but if, unhappily, we were compelled to confine our attention to one thing, our present impression is, that one would be a grapery. And thus our readers can judge in what estimation we hold it as a source of unmixed enjoyment. Let us hope, therefore, that more of our amateurs will betake themselves to this elegant and profitable amusement. We shall do what we can in the way of plans to assist them.

THE AZALEA INDICA.

BY FOX MEADOW.

When man is left to do his own talking and writing, Mr. Editor, it is generally the free, spontaneous evolutions of the mind, and that, too, which lies nearest the heart; so with gardeners. The plants or fruits they love best, they are sure to talk about. We have "pets," sir, in our greenhouses and fruit-gardens that we prize, love, and cherish as dearly as does the banker his auriferous coffers. The Azalea is a pet of ours, Mr. Editor, and we would like to tax your patience a little while we try to talk about it.

It so happened, in the course of our life, that we lived among a very large family of these plants, and the constant paternal care of the head of this family over the "*rising generation*," was the means of fully developing the peculiar characters, qualifications, and properties of *each individual*, and we should also say the *power* of each; for plants have power as well as men. Now, it is about this "*power*," or capacity to grow, which we are just now going to call the attention of plant amateurs to. The Azalea, as it is most generally met with in the plant collections of the day, is a hard-wooded, scrubby bush—little and old. Its age may be traced for years gone by, by the succession of "*jump ups*" it has taken every year from the base of its flower-buds. My neighbor, when he happens to flower a plant whose head somewhat resembles the "*flat-headed*" bouquets they sell in New York, thinks he has got a beautiful specimen. He tells you so; says it's a hard-wooded plant, and takes some years to grow into a large specimen; says all the wood it will make comes from and around the flower-buds; and when there are no flower-buds, it comes from the point of the shoots, near the place where the flower *ought* to have been. But still it is beautiful; yes, beautiful and wonderful. Wonderful, because our comprehension can not conceive the possibility of the plant making or producing even this small amount of wood under the circumstances in which it is placed. What circumstances have you reference to? I mean the Chinese dwarfing, stump-

ing, scrubbing system. The system that ascertains how long it is possible for a plant to exist in a three- or four-inch flower-pot without a shift, *and live.* The system that proves to us how long it is possible for a plant to live and eke out a miserable existence without supplying to the root the constituent elements of its nature. That system which makes, or tries to make, "*air-plants*" of all *terrestrial* vegetation. You tell me you are "*growing*" Azaleas, sir? Nonsense! You are jesting with me; you are deliberately watching them die; and your heart must be as hard as that *black-baked*, hard flower-pot in which your poor Azalea is now dying. Its life to save! Too late! Its constitution, if it ever had any, is lost, broken, *starved to death.* Think you, Mr. Amateur, you ever allowed that plant to develop its power? that you ever beheld the exquisite form of its flowers, the purity of its colors, or that the petals ever developed their proper substance?—the spotting or striping, its vividness, or the beautiful foliage, its adequate texture? Never, sir. The sight of one well and good grown plant in bloom, would make that hard heart of yours leap with joy, and you would never forget the sight. We have seen them grown as pyramids six feet high, and nearly as much in diameter at the base, *from a cutting in three years' time.* We will tell you the secret, and how to do it, if you will only promise not to tell any one else. You go to a nurseryman and make your selection of sorts. Well, you have the sorts, and that's all you can expect from that quarter. They don't spend their time in training plants; so they are not shaped right to begin with—for we form them pyramidal. We stump these plants in pretty closely, for the reason that we require young soft wood for cuttings. These cuttings we take off when about an inch or so long—(we never let them get *hard*); we then place them in a cutting pot. (Description given by Mr. Saunders, for preparing the pots, is the "*modus operandi.*") The pots are plunged in a good strong bottom heat (dung-bed); and in about two or three weeks they are finely rooted. They are potted into small pots, and replaced in bottom heat; very shortly you will see them starting to grow; and when the young plants are about six inches long, nip out the point. This makes it break three or four shoots. As soon as the young shoots appear, re-pot into a five-inch, training up, at the same time, the most eligible shoot as the main stem of the plant. You must now keep your eye narrowly on your plant, and watch it. You will perceive these young shoots swelling—getting thicker. This indicates that the roots are getting hold of the compost in the second potting. This is the time to nip out the points again; and do not forget the form the plant is destined to be when full grown. This must be made as you go along. You must also watch the roots: so soon as you see the young white threads getting round the pot, *into another at once;* and so continue. Now, remember, as long as you continue to practise the "*stopping,*" so long will the plant *continue to grow;* and as soon as *you* stop, the plant will endeavor to *ripen the wood;* and if it achieves the latter, *there is an end* to the specimen. They must be treated as stove plants, and grown in heat; treated with the syringe as you would vines. The latter process keeps them free from all insects. They then *live* in a high moist temperature.

The stopping process is the means by which the branches are produced and symmetry given to the plant; and this is not all. It also forces a multiplicity of roots; increases the capacity in the roots to doubly collect strength and energy from the soil, and manifest itself by its renewed vigor

in the young branches. The first season the cutting is grown to a large size—often four feet by three—but without a flower-bud on it. How is this? Because the stopping process never allows the wood to ripen. In this way we continue until the size is attained that may be required; and, when this is perfected, *discontinue* the stopping: the wood becomes ripe, and the flower-buds are formed at the terminals. Our next attention is required when they are coming into flower. You will perceive around the flowers these young shoots coming into growth that were spoke of in the commencement of these observations. These shoots must be all pinched out, or plucked out; for if they are allowed to remain, they deteriorate the size and brilliancy of the flowers. There should be no *wood growth* allowed so long as the plant continues in flower; but as soon as it is out of flower, take a hedge-shears and clip it evenly all over; put it into a good moist heat, and let it remain there till the wood is ripe, and the flowers set and plumply developed. Then they can be placed in any cool situation till they are required for blooming. We must say a few words about the compost; and the rest we must leave in the hands and heads of the intelligent amateur.

Compost, from first to last, equal portions of thoroughly decomposed cow manure, rough, sharp sand, leaf-mold, peat, and light open loam, pots thoroughly drained, and water often with guano water.

We should like to see some of our amateur plantsmen turn their attention to a few varieties, such as Exquisita, Variegata, Beauty of Europe, Iveryana, Duke of Devonshire, Fielder's White, &c., and place a few such specimens as above alluded to on the tables of some of our floral exhibitions. The financial department of these societies would then very soon feel its influence; for they would soon be enabled to double their premiums, and the "*almighty dollar*" would soon work wonders on the feelings and brains of men that can not see beauty in plant-growing, unless every individual plant is similar to the wonderful Anæctochilus setaceus, filled with channels of gold, running through every pore and tissue, dazzling their eyes, and maddening their senses.

[Here our amateurs and plant-growers have the best article on growing the Azalea which we have yet seen. We commend it to the attention of members of Horticultural Societies generally. Let them grow such specimens, and place them on their exhibition tables, and the results predicted above will in the end follow, for no man or woman with a soul can long resist such a sight.—Ed.]

BRANDYWINE GRAPE.

BY W. D. BRINKLÉ, M. D., OF GROVEVILLE, N. J.

Several bunches of this luscious grape were sent to me by Dr. Henry F. Askew, of Wilmington, Delaware, in 1859. They were taken from the vine on the 14th of September.

Berry rather large, one inch in its longitudinal, and five-eighths of an inch in its transverse diameter; *form* oval; *color* greenish white.

Bunch large, six inches long by three broad, sometimes shouldered and

rather compact in its structure; *flesh* tender; *flavor* saccharine and delicious; *quality* "best;" *maturity* the middle of September.

This exceedingly fine grape originated in the garden of Mr. J. Robinson, in Wilmington, Delaware, about the year 1840; and is an accidental seedling, probably of the Malaga. After having fruited two years in Mr. Robinson's garden, and as he was about to remove to Baltimore, the original vine was taken up and transplanted on the premises of his brother-in-law, Dr. H. F. Askew, of the same city, to whose kindness I am indebted for its interesting history. The removal proved fatal to the original vine. Fortunately, however, a cutting from it had previously been taken by Mr. James Hollingsworth, of Wilmington, which grew and prospered, until it became necessary to use the ground on which it stood for building purposes. This vine was then removed to Dr. Askew's farm, near Wilmington, but, unfortunately, did not survive the change in its locality. Before its removal to Dr. Askew's farm, cuttings were taken by the person on whose property the vine which fruited the specimens sent to me by Dr. Askew now stands, and has been fruiting for several years

[We are obliged to Dr. Brincklé for his description of this new grape. We presume it is the one alluded to by Dr. Norris in our February number. We should be glad to see the fruit in its season.—Ed.]

DESIGNS IN RURAL ARCHITECTURE.—No. II.

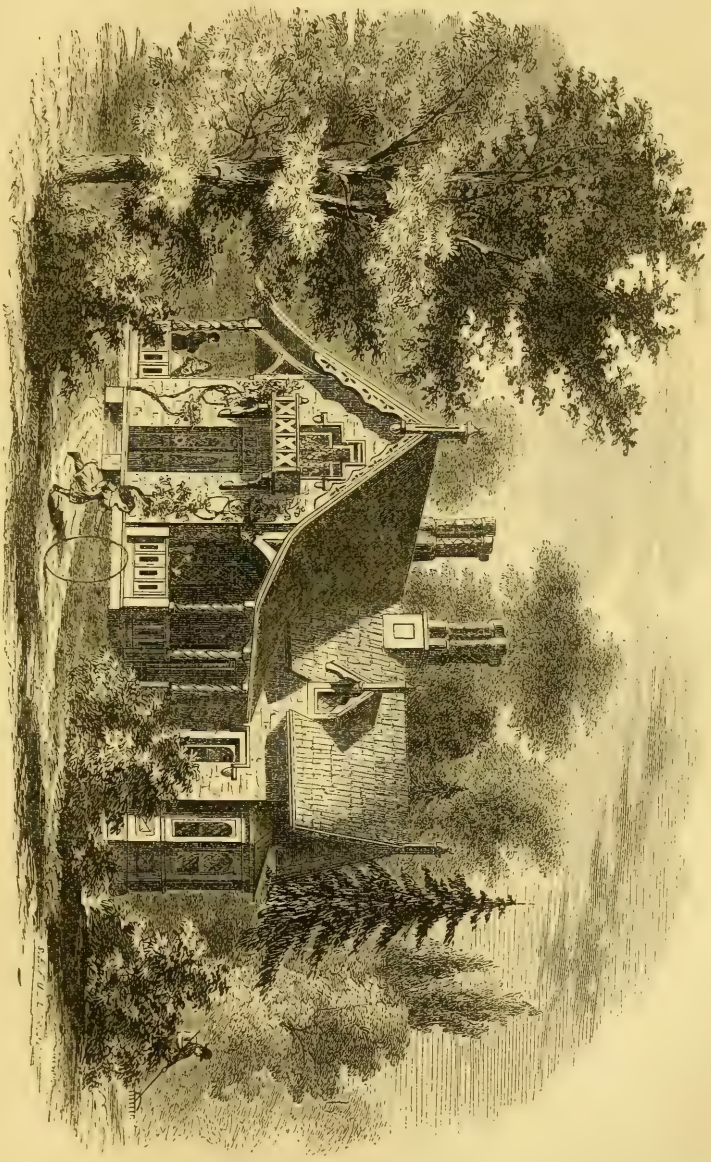
AN ORNAMENTAL ELIZABETHAN COTTAGE.

BY G. E. HARNEY, LYNN, MASS.

A person fond of poetry and old legendary associations, would naturally look with some degree of pleasure upon an architectural design, in the composition of which those sentiments were embodied and carried out; and we know of no period in the history of architecture which will furnish us with more striking examples of the picturesque and ornamental, as applied to domestic buildings, or more display of fancy and imagination, than that part of the Tudor era during which the "good Queen Bess" was occupant of the English throne.

During the reign of Henry VIII, Gothic architecture had reached the perfection of its beauty, and it became necessary to bring about some change of style and ornament; accordingly, architects and others who had extended their travels into the southern countries and studied art in those countries, introduced on returning some of the principal features of the Italian and Florentine schools of architecture.

Hence we see the prevailing architecture of this period to consist of compositions of all sorts of odd fancies and grotesque designs, queer mixtures of Gothic and Grecian, though producing, when judiciously applied, what to our mind are the coziest, sunniest, snuggest little cottages that we know of. Here we find warm, sheltered nooks, and large, cheerful fire-places; broad windows and oriels which court the sun, and steep roofs to shed the snows in winter; heavy verge boards topped with carved finials; round and pointed arches supported on twisted columns of Italian verandas; ornamented balconies and highly-wrought chimney-tops; in fact, almost everything



AN ELIZABETHAN COTTAGE.

in the way of ornament which the fancy could suggest was used by the architects of that period, with but little regard to severe architectural style as practised by their predecessors.

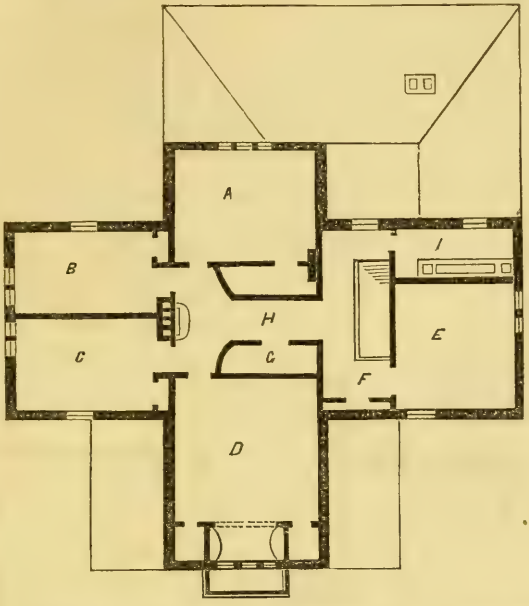
With these remarks we present a design which shows some of the characteristic features of the Elizabethan style. The plan comprises, first, a vestibule, *A*, opening by glazed doors into the main hall, *B*, which measures 14 feet by 16, contains two cloak closets, and is lighted by two long casement windows opening upon the verandas, *C C*. Out of this hall we pass on the left into the parlor, *G*, 14 by 18 feet, and on the right to the staircase hall, *F*. Directly fronting the main entrance is an arched recess filled with seats, and communicating by means of double stained glass doors with the dining-room, *D* : on each side of this recess is a good-sized china



closet. The dining-room measures 14 feet by 17, and is lighted by a broad mullioned window, which overlooks a pavilion, *J*, in the rear. The library, *E*, measures 12 feet by 18, besides the additional width of the bay window which projects from its side. The back entry, *H*, is 4 feet wide, and opens into the dining-room, *D*, kitchen *I*, water-closet, *K*, and out upon the pavilion, *J*. The kitchen, *I*, is 14 feet square, and contains cooking-range and water apparatus. A pantry, *L*, and storeroom, *M*, open from it. In the cellar may be found the usual kitchen offices. The second floor contains five chambers, *A*, *B*, *C*, *D*, *E*. The front room has a recessed window opening upon a balcony over the entrance door. All other chambers have closets, and a large clothes-press or cedar closet, *E*, opens from the corridor, *H*.

This cottage should be built of stone, with the ornamental portions of wood. Great care should be taken in building to have these ornamental trimmings made in a solid, substantial manner, and of very heavy stock ;

for if they have the least appearance of flimsiness, the effect of the whole design will be spoiled, and it will be sure to meet the censure of those who so justly condemn "gingerbread cottages." The interior finish should be of



the same general style as the exterior; we should prefer some hard wood simply oiled, showing the natural color and grain. The halls and vestibule might be wainscotted to the height of 2½ feet all around, and the walls brown finished. Height of first story 11 feet 6 inches in clear. The cost of the cottage would be about $2,500 to $3,000.

GIRDLING THE VINE.

BY ANDREW S. FULLER.

About 1745, Col. Buchott, of Metz, in France, invented, or claimed to have invented, the plan of girdling, or, as the French call it, the annular incision of the vine. For this, he was awarded a premium by the Agricultural Society of France.

It was claimed that the invention would be of great value in hastening the maturing of the grape, as well as improving the quality. The latter point has been one in dispute among grape-growers from that time down to the present.

Thiebaut de Bernaud, in his Manual on the Vine, which was published in New York in 1829, says, "Girdling is a means of forcing the ripening of the grape, and increasing its size and quality. By the oldest records we have, it appears that it is a process that has been long and well known, and

was used to prevent the blighting of the vine. All writers on agriculture, from Theophrastes and Pliny down to Julius Hygin, speak of it in the most unequivocal terms as a practice in use among all the gardeners and vine-dressers of their time."

Wm. R. Prince, in his Treatise on the vine in 1830, makes similar remarks when speaking of this subject. As the author of the latter work is yet among us, we hope, for the benefit of others as well as ourself, that he will point out the chapter wherein we may find this subject treated in the works of the ancient authors mentioned. We do not say it is not mentioned by them, but simply that we have not been able to find it in any edition of their works which we possess.

The Agricultural Society of France, which awarded Buchott a premium for his invention, was composed of men who had read the Agricultural and Horticultural writings of the ancients ; and, without doubt, knew what they contained in relation to the vine. This seems to preclude the idea that it was an old and well-known practice in the days of Pliny, Theophrastes, Columella, and other writers of their time, as has been claimed.

Strabo speaks of girdling layers of the vine before burying them, as it compelled them to form roots more abundantly than if buried without. This is well known at the present time; but it had no reference to the fruit, as is claimed by the authors referred to.

Torsion, or bending of the shoots, is much practised in France upon fruit-trees, as well as upon the vine ; and it produces similar results, by hastening the maturing of the fruit, without being so injurious to the plant. This operation was well known to the ancients.

Du Breul, in the Revue Horticole, p. 86, 1857, says in relation to the subject, that "Lancry, in 1776, exhibited to the Society of Paris a branch of plums on which the operation had been performed, by which the size of the fruit had been very much increased; so much so, that the success of the operation was fully proved."

When speaking of girdling the pear, he says there have been many reasons given *why* it increases the size of the fruit, but none were satisfactory.

M. Bourgeoise, in the Revue Horticole of May, 1858, says, "Last season, I had the honor of presenting the Society of Agriculture of Paris some branches of the vine upon which had been performed the 'annular incision,' by which operation the ripening of the grapes had been hastened fifteen days, and at the same time the berries were much larger and more beautiful."

Upon this representation, a commission was appointed by the Society, of which M. Pepin was the reporter, to examine the experiments in his garden at Peray. With his report, he placed upon the Bureau of the President some remarkable specimens, showing the following results :

1st. A branch with two bunches in the normal state.

2d. A branch upon which the incision had been practised under the best conditions.

3d. A branch upon which a ligature had been placed instead of the incision.

4th. A branch taken from a branch of a stock which had received the incision upon the old wood.

He says, further, that he had repeated the experiment upon a branch, leaving three bunches, upon which was practised two incisions. The same phenomena were exactly reproduced. The bunch below the first incision remained in the normal condition. The bunch above the second incision

became much enlarged and more beautiful, as well as advanced in ripening. The bunch between the "incision" was only of half-matured size, and did not ripen at all.

The final result appears to be, that it is useful for every country or climate, but particularly for those of so low temperature as not to permit the grape generally to ripen, enabling them to produce grapes for *the table* of first quality, and equal to the celebrated Chasselas of Fontainebleau.

Some of the writers upon grape-culture have recommended girdling as of the greatest importance, while others have denounced it as injurious to the vine, and only adding size and beauty in appearance to the fruit, besides depriving it of the power of acquiring the real excellence which it would acquire if ripened in the natural way. Still another class of writers have taken a medium course, and recommend its use only in particular seasons, such as cold, damp, or late seasons, when blight may be expected, and a failure of the crop is certain unless some means are used to hasten its maturity. Without doubt, the real value of the invention is this : it gives us an opportunity of getting a tolerable grape in unfavorable seasons, instead of getting none.

Wine made from grapes grown on girdled vines is always inferior to that from those well ripened in the natural way, and its keeping qualities are very much inferior. If practised extensively upon the same vine for several years in succession, it weakens the plant, if it does not entirely destroy it. In some parts of Europe, it has been practised in the same vineyard for half a century, and yet the vines are thriving; but they only girdle a portion of the vine each year, always allowing a free circulation between a sufficient number of leaves and the roots to keep the plant healthy.

We have often seen what were apparently remarkable results from its practice upon the Isabella and Catawba vines in this vicinity; and, from the large and beautiful appearance of the bunches, many a premium has been awarded at our Horticultural and Agricultural Fairs for grapes produced in this way, although the *quality* of such fruit was very inferior to other specimens exhibited in competition of less size, because these were in their normal state.

A friend of ours, who lives in an adjoining State, where the Catawba does not fully ripen in the open air, stated to us not long since that he had taken premiums on his *dropsical* Catawbas for several years in succession over all competitors, because of their fine appearance, which was produced by girdling.

Girdling may be said to be useful in unfavorable seasons in three ways :

1st. To prevent blighting of the blossoms.

2d. To hasten the maturing of the fruit.

3d. To increase the size.

To accomplish all of these, we must perform the operation a few days before the flowers expand; but if the season is favorable, and the fruit sets, it can be performed any time until the fruit is fully grown, only the sooner it is done after the fruit is set the better the results.

The mode of operation is to cut a ring of the bark clean to the true wood. The size of the ring should be from one-eighth to one-half an inch in breadth. It can be performed on the old as well as new wood; but the last year's growth is preferred. Do it only on that which you intend to throw away at the next season's pruning.

THE PELARGONIUM.

BY JAMES H. FRY, NEW BRIGHTON, S. I.

Having noticed in the February number an article on the Pelargonium, I think the author's practice and mine somewhat differ ; but I will leave that to be decided by those interested. This being one of our many attractive summer blooming plants, too much can not be said in its praise ; no matter whether seen in the show-room or upon the greenhouse stage, it will be sure to gain the admiration of all lovers of Horticulture, not only for its flowering propensities, but for its varied colors and beautiful habit. There are some known as Fancy Pelargoniums, with much smaller flowers and foliage, and also of a much dwarfer habit, but none the less beautiful ; in many cases they are preferred to the larger growing sorts, for, as a general thing, they bloom more freely. In Great Britain, where there is a greater demand for them, they are propagated at all seasons of the year, but as a general thing in the fall.

In this country, where so many things have to be done in a short space of time, the best and surest way of propagating and growing the Pelargonium in a limited time must be adopted. For my part, I would never use bottom heat, for there is too much trouble and care attached to it compared with the easy method I adopt. Although not a new one, (for I suppose it is well known to the practical gardener), yet for the benefit of amateurs and those interested I will repeat it. In the first place, we will suppose you to have some plants in bloom, or nearly so ; as soon as they have done flowering, which will be in June or July, cut them down, leaving only two or three joints of this season's growth ; this done, take the plants outside and lay them down on the side of the pot, so that they shall not receive any water whatever until they commence to break, which will be in a week or two ; then set them up and water them. When the shoots have grown an inch or so, shake them well out, and re-pot them into much smaller pots than those which they were taken from, well drained, using rich sandy loam ; put them upon a plank to keep the worms out of the pots, and keep them fully exposed ; water them regularly, and they will soon fill the pots with roots, and make nice short-jointed wood. When the shoots are two or three inches long, pinch them back and make them break again. The object is to get as much growth as possible in the fall, and likewise to keep them bushy, and form the base of handsome plants for next season. Before taking them into their winter quarters they will require to be shifted into a larger pot (the one that they will be intended to bloom in); well drain them, and cover the drainage with a little moss to keep it from getting choked up with the soil. Follow these directions, and depend upon it you will get specimen plants worthy of the name.

In arranging a stage of Pelargoniums, we require plants of different sizes; well, we will suppose the plants alluded to above to be the largest, and the ones we are going to propagate to be the smaller ones ; select from the branches the softest and best shoots, cutting them into pieces with three or four joints ; make a clean straight cut close under the joint to be inserted, also cutting off the leaf at that joint, leaving the others on. This done, prepare a small frame, such as is used for melons, with sifted soil ; cover it with a quarter of an inch of sand, put the cuttings in two inches apart

each way, and water them. They will not require any glass over them, but simply shaded with a piece of muslin in the daytime, taking it off at night: in two or three weeks, if attended to, they will be rooted, and fit for putting into small pots. Put them into a cold-frame, and keep close for eight or ten days; pinch them back and re-pot them before taking them into the greenhouse for the winter, where they should be kept as near the glass as possible. In growing Pelargoniums for exhibition, shape as well as quality is admired. By tying a piece of twine around the pot close under the rim, and then tying the branches down, *you do away with poking sticks and peys into the pot, whereby the roots are injured;* and not only that, but you can get your plants low and bushy. When tying them down, the plants should be dry, for the branches will give more readily, and not be so liable to break. Let your own judgment guide you when you are stopping or pinching them back; get the rim of the pot well covered; the centre will take care of itself. When they are in bloom the strings can be taken away, so that you can show them without sticks or support of any kind. During the winter season they require frequent fumigating with tobacco to keep down green fly, using water very sparingly.

[Mr. Fry probably alludes to an article in the February number for 1859. We esteem his plan a much better one. He is hardly explicit enough on some points to satisfy amateurs; for instance, they will scarcely be able to judge at what time he prefers to put down cuttings for his small plants. If they select the early part of September, they can hardly go amiss.—Ed.]

ORIGIN OF THE KING APPLE.

BY JAMES M. MATTISON, JACKSONVILLE, N. Y.

Having given the subject a pretty thorough investigation, I present the following as the true history of the King Apple of Tompkins County:

About fifty-six years ago, Jacob Wycoff brought it from Warren Co., N. J. Mr. Wycoff moved to this county about sixty years ago, and finding the art of grafting practised here, procured the grafts while on a visit fifty-six years ago. Mr. Wycoff is now dead, but always claimed it to be a seedling, and it was named by him King. The Congress of Fruit-Growers at Rochester added Tompkins County to it, to distinguish it from another of the same name.

On a visit this winter I undertook to trace out its origin, and went to the place where it is said to have originated. This is about one and a half to two miles from Washington, Warren County, N. J. I found very old trees that had been grafted; they seemed to be over fifty years old; two aged men, Daniel Fleet and William Crivling, near Asbury, were both acquainted with it from boyhood. It originated on the north side of the Musconetcong mountain, about one mile from where these gentlemen live. Mr. Jesse Weller says he knew one very old tree on his farm forty years ago; it has been dead several years. They call the apple Toma Red throughout that section. It does not appear to be much disseminated, being confined to a small locality. I brought some of the apples with me, and compared them with mine. I also gave them some that were raised in

my own orchard. They are not quite as high flavored in New Jersey as they are here between the lakes.

The tree is entirely distinct in growth. When I was in New Jersey I pointed out trees as I was going along the road, and inquired if they were not what we call the King of Tompkins County, and they said they were. The limbs grow so very horizontal that the tree needs scarcely any pruning, and one of its good qualities is, it is a regular bearer every year, and a fine, thrifty grower. Hundreds of barrels have been sold from this vicinity this year, and we are all of one mind, that it is the most productive, and will sell for the largest price per barrel of any market apple that is raised in this vicinity. Dealers realized four and five dollars per barrel last fall. The apple is one of those crimson red with yellow ground that attract the eye, and its color will not disappoint you when you come to eat it. Its very agreeable perfumed flavor is equal to the Swaar. It wants gathering ten to fifteen days before the Baldwin or Greening, and if carefully done, will keep good until the 1st of May.

[We think Mr. Mattison has made out a pretty good case for the King Apple. Its origin, as far as we are aware, has never before been traced to any particular locality; but the facts given above would seem to put us in the way of clearing up much of the obscurity which has hitherto surrounded the subject. Can any of our friends in Warren County give us additional facts?—Ed.]

IOWA PRAIRIE SKETCHES—No. 3.

BY "MINNIE."

The unnumbered swells of a rolling prairie, covered with tall grass, and waved by the wind, have been, by many, likened to a view of the sea with her swelling tides. But there is another feature in which there is a resemblance; for, as far as the eye can reach, each swell is so nearly the *fac simile* of a thousand more, on every hand, that you might as well fix the eye on one of ocean's waves, and say, this shall be a mark to guide me in my course. In fact, the *unsettled* prairie is without a landmark—save one—and the traveller soon becomes bewildered and lost—unless, like the mariner on old ocean's bosom, he is provided with a compass—until he discovers *this one mark*, Nature's own compass, guide, or finger-board, to show the wandering stranger *which way to go.*

This wonderful provision of Providence is the *Silphium laciniatum*, of the natural order Compositæ; known to the people by the common name, "Rosinweed," and which is sought by the school-boy in autumn, that he may obtain the resin which exudes from it in abundance.

The S. laciniatum can not long remain *un*noticed by the observing traveller, although his attention is not attracted to it by any *beauty* which the coarse, rough weed possesses; but by its *radical, sinuate-lobed leaves*, several of which spring from each root, and generally overtop the grass by a few inches; their lobes all point the *same way*, which soon strikes the eye as *something peculiar;* he stops to examine, and soon discovers that the lobes of all these leaves always point exactly *north and south.*

From the centre of these arises the tall flower-stalk, bearing rough, pinnately parted or almost entire leaves; opposite at or near the top, alternate lower down, and pointing, *not*, like the radicals, always north and south, but toward every point of the compass.

The flowers are yellow, much resembling, in general appearance, small sun-flowers, and, like them, *turning their faces*, while young, to follow the sun.

The height of the stalk is from six to twelve feet. The radical leaves, with their long petioles, attain a length of two to three feet, probably even longer in very high grass.

The caulescent leaves are much smaller, and nearly or quite sessile.

This plant does not seem inclined to *grow* where the ground is broken up and cultivated, and probably it is destined, like the poor Indian who was formerly guided by it, (as he followed the buffalo in the chase, or hunted the deer and prairie-chicken to obtain food,) to *disappear*, as the white man, with his plow, shall take full possession of the soil.

[We regret to hear that you have been ill, Minnie, and gladly welcome you back to health and to the pages of the Horticulturist. We hope to hear from you often about the flowers you so dearly love.—Ed.]

INSIDE, DETACHED, AND DIVIDED VINE BORDERS.

PREVENTION OF MILDEW ON THE GRAPE.

BY WM. BRIGHT, PHILADELPHIA.

The editorial article in the last number of the Horticulturist, on the "New Method of Constructing Vineries," afforded me much gratification. I esteem it a high compliment to find my plan of inside borders commended by the acute and discriminating conductor of this journal; and I am pleased to learn that borders, embodying the leading feature of my plan, have been proved, by years of trial, practically successful, and in many important respects a great improvement upon the common borders. I first constructed borders upon the plan in question about one year ago, and when I published my description of the "inside, detached, and divided border," I supposed that I was the first, either in England or America, to adopt this improvement. When I was in England last winter, I described my plan to several of the leading grape-growers in the first establishments in that country, and all acknowledged that it was new and promised good results. Neither the "Book of the Garden," by Mackintosh, nor any other English work or journal, has, to my knowledge, described or suggested an inside divided vine border, detached from the front wall, and drained and ventilated as I proposed. But it seems that you, Mr. Editor, penetrated this field of improvement eleven years or more ago, and constructed a border embracing the leading features and principles of my plan; I cheerfully yield to you the credit due to your ingenuity, originality, and judgment, and am right glad that I have found so able and intelligent an ally in the advocacy of the new border.

With your permission, I will state briefly wherein I think my inside border,

detached from the front wall by an air chamber four inches wide, is superior to a border resting against a front wall, even if made hollow so as to contain a body of air. In the first place, it is cheaper than a wall four or five feet thick, made hollow. My front wall is only nine inches thick, and the front wall of my border is only four inches. Secondly, any wall, even if made hollow, in very cold weather conducts heat away from the border. But chiefly I prefer the detached border because the open air chamber between the front wall and the border furnishes a passage through which the air of the house may be carried down front, and (by means of proper tubes or flues) entirely under the border. My object is to keep the whole border, at all times, as near as possible of the same temperature throughout (top and bottom) as the atmosphere of the house. It is true that the under side of the border and the air tubes will always be a little cooler than the house, but this only serves to condense the moisture in the air, and hence a current passing through these tubes must always become highly charged with humidity.

This new border, entirely inside the house, detached from it, divided into sections or huge pots, and thoroughly ventilated on the sides and underneath, and extra drained, is now under full trial in several houses besides my own, near Philadelphia, and we shall soon find all the objections to it, if there be any.

The method of cultivating the vine, described in my recent work on the Grape, viz., the single-stem system, growing a cane one year and fruiting it the next, and then cutting it down and growing a new cane before fruiting again, I think will be found a plan well suited to all kinds of culture, in doors and out, but especially to the inside and divided border. The plan mentioned by the editor of the Horticulturist, of growing a new shoot from a grape root while fruiting a cane from the same root, (practised also by the German vine-growers in Ohio,) I do not think will ever meet with the most perfect success. You can not easily grow wood and fruit at the same time. Either the fruit or the new cane must suffer. This is my decided opinion. But let the profession test the matter and decide.

There is one subject connected with the management of vineries, not noticed in my work on grape culture, upon which I feel like saying a word, and that is, *the prevention of mildew*. I am quite convinced that a comparatively shallow, not very rich, inside border, well ventilated and well drained, will do much towards keeping the vines in forcing-houses, and cold-vineries, in a healthy, hardy condition, so that they will be better able to resist mildew, than they are under the old system of deep, over-rich, sodden borders, partly outside. But there are still other means of preventing mildew which I desire to notice.

What are the chief direct causes of mildew on the Grape in the forcing-house? In my opinion, they are, *excessive moisture* with deficient light and heat, or *excessive dryness* with light and heat. The chief requisites for successful grape growing, after you get healthy plants into a proper border, are, 1st, light; 2d, heat; 3d, moisture; 4th, air: upon the judicious management of these four great agents the whole result depends. A high degree of heat in a very dry, ill-ventilated house, even with light, will produce mildew. Cold, damp air, with light or without it, will have the same effect as hot, dry air. In the absence of sunlight, the tendency to mildew is always greater than in bright, clear weather, no matter what the other

circumstances may be. Excess of humidity in a cold, dark, damp day is almost sure to produce mildew. The right management of the moisture of a house, in my opinion, is of far more consequence, and far more difficult, than that of air. It is astonishing how much heat the vine will bear, without injury, if you have plenty of moisture, plenty of light, and a little fresh air. With the condition just named, no matter how hot the house may be, if you don't boil the leaves, no mildew will be produced. When there is but little clear sun-light, the heat and humidity of the house tend rapidly to produce mildew. In a damp, warm, cloudy day, with little sun-light, and no wind, there is no danger in "airing freely." There are such days, when it would do no harm to remove all the sash from a hothouse, while warm, genial showers are falling, and let the vines and border receive a copious natural watering. But free ventilation is not so much needed in clear, light, brilliant days, as is generally supposed. On such days, if you have plenty of moisture, four inches of air, equally applied, along the top of each side of a span-roofed house, is amply sufficient. As I have said before, no matter what the heat may be, that of 212°, when you have got abundance of moisture and plenty of light, in a clear, brilliant day, and but little air is needed. When the atmosphere is charged with humidity in a very warm, cloudy, muggy day, then beware of excessive humidity in the house, without free ventilation. So, also, excessive humidity, in cold, dark, damp weather, is almost sure to create mildew.

I recommend, as a preventive of mildew, to pay particular attention to these facts, and especially to the management of Moisture. To this end, I place in my vineries large shallow *Evaporating Troughs*, sixteen or eighteen inches wide and four inches deep, running the whole length of the border, and resting upon it. These troughs are so contrived that the water can be pumped into them and let off at pleasure. In hot, light, dry, clear weather, these troughs are kept constantly filled with water, and the evaporation from such a surface of shallow water is immense, and serves to keep up an even and healthful degree of humidity without constantly sprinkling and syringing the house with the temperature at 100°; the evaporation from the troughs is so great that there is very little necessity for syringing, except to cleanse the foliage of the vines, and thus a vast saving of labor is effected at small expense. When the weather is cloudy, damp, and cold, then the water may be let off from the troughs, as a dryer atmosphere will be required to prevent mildew; and this is very readily done, returning the water to the cistern for future use. I think if gardeners will try these large evaporating troughs, for producing humidity in forcing-houses and cold-vineries, they will be highly pleased with their effect. Remember the principle, that *hot, dry air* will produce mildew as effectually as cold, damp air, and ventilation without humidity will not save you. If you have light, heat, and plenty of humidity, the vines will thrive in very little air, and will not mildew.

[We have to thank Mr. Bright for his excellent article on a subject so interesting to all grape-growers. We endorse his plan of inside borders cheerfully and confidently, because many years' experience has convinced us that its decided advantages over the old system can hardly be over-estimated. There can be no impropriety in stating our belief that we were the first to introduce the subject and test its value; we had never seen a line on the subject when we wrote our first article, which was several years after we had fully tested the plan. The reasoning which led us to adopt the

plan was so natural that we felt no surprise that somebody else had arrived at the same conclusions. When, therefore, we saw Mr. Bright's article in the February number of the *Gardener's Monthly*, we did not hesitate to give his plan a full and cordial endorsement. We have since received his work, which we notice elsewhere. We shall now briefly notice two or three points in Mr. B.'s article; and first, we must candidly own that his detached inside wall is more perfect than our single hollow wall. In *theory*, a hollow wall is a perfect non-conductor; in *practice*, it is several removes from that condition; and that is just the difference between the two. We have never seen a mason who could build a perfect hollow wall, though all profess their ability to do so. When such a man can be found, a wall need not necessarily be more than fifteen inches thick. We mentioned the case of one cane being fruited the full length of the rafter, at the same time that another was laid in for fruiting the next season, to show the vigor of vines eight years old in a narrow inside border. Though far from being perfect, it is a great advance upon the old spur system. M. B.'s plan, of giving the whole energies of the vine to the production of either fruit or wood, will, undoubtedly, yield far more satisfactory results.

There are three other points alluded to by Mr. B., viz., light, moisture, and heat, which are very imperfectly understood, but which are of peculiar significance in grape-culture. We hope his remarks on these points will be read attentively. We have elsewhere stated, that with a proper degree of light and moisture, no evil will result if the thermometer should rise to 175°; and Mr. Bright considers himself safe within 212°. We will here lay down the proposition, that, under proper conditions, the thermometer may be allowed to range, during the day, from 100° to 115° with decided benefit. What those conditions are, we shall explain fully on another occasion. In the mean time let our readers examine the proposition carefully, and controvert it if they can. We hope this first contribution from Mr. Bright will by no means be his last.—Ed.]

CHEAP COLD VINERY,

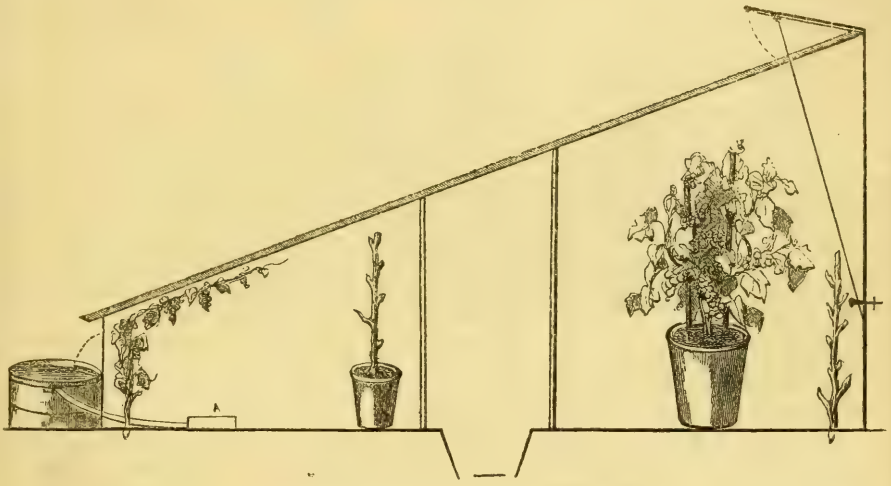
BUILT BY DR. GEO. PEPPER NORRIS, NEAR WILMINGTON, DEL.

The house is a lean-to, 40 feet long by 13 wide, 8 feet high at the back and 3 feet in the front, with a walk 2 feet wide and 18 inches deep in the centre, and a door in each end. The house points south south-east; the back, front, and north sides are made by setting cedar posts three feet in the ground and squaring them on one side, to which are nailed one-inch plowed and grooved floor-boards, making the back and north side tight enough to exclude frost, but sufficiently open to admit some air through the joints in the boards, which I think advantageous. The roof and other end are made of hemlock, 3 by 4 rafters, between which are one-inch pine strips grooved to let in the glass, which is 10 by 12 size, 4th quality; 4 two feet square and 2 four feet square ventilators in the roof; and 4 two feet wide and 10 feet long ventilating sash hung on the front plate, together with the two sash doors, complete the ventilation.

The top ventilators are raised and lowered at pleasure by means of an

iron rod shown in the sketch, which at its lower part is pierced with holes and fastened by means of a nail to the back posts. The border is 20 feet wide, running under the entire house, and extending 3 feet 3 inches beyond the front and back, except at one end of the house, where the soil is simply incorporated with wood ashes for the purpose of experiment.

The border is three feet deep, under-drained with rough stones, on top of which are layers of oyster shells, 50 bushels of bones, several cart-loads of coach-makers' trimmings, leather straps, (thus getting the old horse devoid of the putrid carcass;) the top strata consists of the old soil of an adjacent pasture field thoroughly incorporated with well-rotted manure, wood ashes, sand, charcoal, and leaf-mold, the whole of which had been prepared a year previously and suffered to be thoroughly intermingled. The border was prepared last autumn. At each end of the house are oil hogsheads,



(200 gallons,) from which the rain-water is conducted into the interior tanks, thus having always a supply of soft warm water.

The rough cost was, lumber, $40 ; labor, $50 ; glass, $22 ; hardware, putty, hinges, nails, &c., $8 ; making a cost of $120, exclusive of border and vines. It might have been constructed cheaper by avoiding the plane ; but being in the immediate vicinity of the dwelling, this was undesirable. 40 vines are planted in this house, 32 of the 40 being Black Hamburghs, 2 West St. Peter's, 2 White Frontignan, 1 Black Frontignan, 1 White Nice, 1 Muscat of Alexandria, 1 Golden Hamburgh. The front row are planted 18 inches from the front posts, and intended to be trained up 14 inches from the glass, with the intention of stopping them when they have proceeded half way up the rafters.

The front row will be pruned on the long rod renewal system, i. e., having two canes, allowing one to bear a full crop, then cutting it down to a single eye, staking the crop the next year from the other rod, thus getting the fruit from the new rod each year.

The back row will be trained up on vines one foot from the back posts, on the spur system ; the front vines being kept in check, and the length of rafter given will prevent shading. This season it is expected to fruit fifteen pot vines, which are now standing on the front border, as shown in the sketch, with the expectation of removal to back border when the front permanent vines may be encroaching, and there allowed to ripen their fruit. To many, this would be an agreeable feature, as the characteristic of the American is to *have the fruit the first year.* This plan of house is well calculated for pot trees or vines, and was partly erected on account of its correspondence with a proposed house exclusively for orchard culture. The interior has had several coats of white-wash, with which sulphur had been intermingled ; this and the cost of the posts, which were got out of the woods during winter, are not included in the estimate. A wooden lattice-work is placed at the bottom of the walk. The house, as far as tried, works admirably ; the advantage of the two sized ventilators is perceived, as in cool clear days the small ventilators only may be opened, and as the heat increases the larger ones may be raised. Should more ventilation be thought necessary, sliding doors may be cut in the back walk : for an orchard house this would be required. The house presents a very good appearance ; and were another to be erected, no change would be made. To some the pitch of the roof will appear too low; but as we expect during the heated term to keep the glass clouded either by white washing externally, or by the painting to resemble frosted glass internally, we have no fears of the vines burning. The glass is all 4th quality, 10 by 12, and is remarkably good for the price ; no better would be desired. A tank for liquid manure water will be an indispensable adjunct, and has been already provided for. The vines came from Ferguson's and Bright's, Philadelphia, were carefully planted, and are starting beautifully. More anon.

[The above is a good and cheap plan, and within the means of a good many who ought to have graperies. We should put in fewer ventilators rather than more, and are far from regarding the roof as being too flat. With a proper degree of moisture in the house, (a condition not consistent with free ventilation,) there is no danger of burning the vine, even with the thermometer at 175°; a proposition which may startle some of our friends, but which we know to be true.—Ed.]

THE SPERGULA PILIFERA.

We have lately had a number of inquiries in relation to the *Spergula pilifera*, and present the following from the French, as containing, in a brief compass, about all that is known of its adaptability to ornamental purposes. We also present a drawing of the plant, which gives a good idea of its general appearance, except that it is much more compact as we saw it. Mr. Sargeant, we believe, has had it out during the past winter, and we may therefore soon expect to hear something specific in regard to its hardiness.

" The Spergula pilifera is a very pretty miniature plant, not exceeding two inches in height (including the flowers) ; its numerous small stems, which are hidden in a mass of fine acicular, very short leaves, form a compact, velvety turf, of the most beautiful green, and quite similar to moss.

"From the midst of the leaves, the flowers show themselves during nearly the whole of summer and autumn. Small, starry, very white, and slightly fragrant, they succeed each other in great quantities, and in fading leave no disagreeable traces.

"Of very rapid growth, the smallest portion, planted in the spring, forms during the current year a tuft from ten to twelve inches in diameter; it consequently covers the ground rapidly, and appears perfectly adapted for forming edgings, turf walks, or lawns, of the most pleasing effect. It can also probably be used advantageously in ornamenting rock-work, &c. It grows well in the shade, and experiments already made lead to the belief, that it will thrive equally when fully exposed to the sun, preserving its verdure and remarkable freshness of appearance.

"A mossy rural turf, requiring no mowing or cutting of any kind, which may, indeed, be said to need no care, requires no eulogy, and by these qualities alone recommends itself to amateurs.



THE SPERGULA PILIFERA

"Its propagation is very easy, either by seed or by the division of the stands, which may be separated almost infinitely; a small package of the seeds, or a few tufts of the plant, are therefore sufficient for a stock. The sowing should be in the open air, whether in pots or in the ground. The seed being very small, should be very slightly covered, or it is sufficient to leave it on the surface of the ground, in which case it should be kept in the shade. The young plants should be pricked out into the open ground, where they are to remain, at a later period. If it is intended to form an edging, the plants should be placed at a distance of from eight to ten inches apart. If a turf walk or a lawn is to be made, the plants should be placed checkerwise, at distances of six or eight inches. The spread of the plants is so rapid that they will soon form a continuous carpet, compact and inimitable.

"As to the quality of soil required, this plant does not appear to be difficult, and it is probable that it will thrive almost anywhere in a soil somewhat compact, provided there are a few inches of vegetable mold. If the soil is not naturally compact, it should be made so by using the roller.

"Mr. Lucien Georges, to whom is due the initiative of employing this plant in the ornamentation of gardens, gave it the name of *Sagina acicularis* in distributing it in France and England. In England it was supposed to be the *Spergula pilifera*, and it is by this name that it has been announced in the catalogues and brought forward in the horticultural jour-

nals, which have eulogized it very highly. In consequence of this name being that under which it appeared in the horticultural world, we preserve it; it is proper to say, however, that it is neither *Sagina acicularis* nor *Spergula pilifera*, but rather, according to Professor Decaisne, *Spergula* or *Lagina subulata*, an indigenous species in several parts of France."

ROTATION IN PLANTING.

BY ARCHIBALD VEITCH, NEW HAVEN, CONN.

The opinion that trees, vegetables, and cereal grains do not succeed when planted more than once on the same piece of land in immediate succession, has its foundation in experience; and the advantages derived from a close adherence to the rotation system, whether in the garden or on the farm, is so evident as to need no defence; and when it is not in some measure followed, failure and disappointment are the inevitable results. But while this is true, it seems as if the injurious effects which flow from pursuing an opposite course, had in some instances been overstated, and reasons assigned which, to say the least, are unsatisfactory.

It has been affirmed, for example, that "wheat will not succeed after wheat, dahlias after dahlias, even by manuring the ground;" whereas wheat has been often grown in this way without disappointment; and dahlias have been planted on the same land four years in immediate succession, and, what is noteworthy, they grew better and produced finer flowers the last year than they did the first. Every gardener knows that onions can be grown on the same land for a series of years without any sensible diminution of crop. Still it is admitted such examples may be exceptional, and insufficient to prevent any one from following the alternate method of raising crops.

What is true of the Garden and the Farm, is also true of Fruit and Forest Trees, and abundant evidence could be adduced to show that by planting any of those in immediate succession, they do not succeed well. One remarkable instance of this came under my observation some years ago. A gentleman in the neighborhood of where I lived owned an extensive plantation of old trees, consisting chiefly of Scotch Fir and Norway Spruce; these were cut down, and shortly after the land was again planted, as well as an additional breadth which had previously been under wood. The consequences were, the young trees on the site of the old plantation died by the thousand, while those on the additional piece did as well as could be wished. At the time the old trees were cut, they were mostly sound and growing rapidly, and many bidding fair to equal those famed of old,

> "Hewn on Norwegian hills, to be the masts
> Of some great admiral."

Apple, Pear, and Plum-trees have often failed when planted in a similar way, and it is more than likely that the cause or causes, in every instance, had been the same.

How to account for such failures seems no easy task, and yet some facts

can be stated which tend in some measure to remove the difficulties that stand in the way of rightly understanding their cause.

The opinion is entertained by some, and, indeed, such a one was expressed by an eminent fruit-grower before the Scientific Convention in this city some time ago. It was stated that "the Apple and the Pear did not succeed after the Apple and the Pear, because the first time had exhausted the land of those elements necessary for their growth." Now there can not be a doubt but that all trees exhaust the land in which they grow to a certain extent; but do they exhaust it so much as to account for the succession trees refusing to grow at all, or, in some instances, lingering in a weak and diseased condition? That such a proposition is insufficient to account for the failure of the forest trees stated above, is evident from the fact that they were in the high noon of their prime, and certainly taxing the capabilities of the soil greatly more than what the saplings, their successors, did or could do. If the land was incapable of supporting the young trees, how account for its ability to sustain the old? For the sake of illustration, take the case of the Cedars of Lebanon. Speaking of those trees, M. Lamartine, in 1832, says, "These trees diminish in every succeeding age. Travellers formerly counted thirty or forty; more recently seventeen; more recently still, only twelve. There are now but seven. These, however, from their size and general appearance, may be fairly presumed to have existed in Biblical times." It is according to analogy to suppose that had those trees been cut down any time during the last thousand years, and the same sort, or any of their congeners, planted instead, they would not have succeeded any more than those already referred to; and, besides, if such failures are attributable to the exhaustion of the soil, then we are forced to the conclusion that it takes a Cedar tree more than a thousand years to accomplish that which a Turnip or a Beet can do in one.

The only rational way of accounting for such phenomena is, to refer to the agency of fungous matter in the ground consequent upon the decomposing roots and old tree stumps. That such matter is present in cases of failure is exceedingly probable, and the roots of the young trees in its neighborhood, or in immediate contact with it, are likely to become diseased and finally perish. Should there be any doubts about fungi in the first stage of development poisoning the roots of trees, there can not be any when in more advanced stages; as the mycelium or spawn, which consists of elongated cells, often tangled and web-like, can be seen without the aid of glass or microscope, spreading over and destroying the roots of growing plants. The opinion seems to be generally entertained that such fungi grows only upon putrescent substances and the tissues of decaying roots. In its normal condition it may be so; still it is not singular to see the mycelium attached to roots still alive. The observing gardener may see many of the injurious effects of those subterranean enemies of vegetation, as they affect many of the crops under his care. Its blighting influence may especially be seen in strawberry-beds, when by mistake they have been mulched with spent tanner's bark, saw-dust, or chips of wood.

To be practical, as regards the planting of young trees on the site of old orchards, the only remedy which can be recommended is, that care should be taken to remove every old root; and that can be done only by trenching the land as deep as the roots of the old trees had descended; or, as a matter of economy, it may be trench-plowed. Whichsoever method is adopted, it

ought to be thoroughly done. The roots, as they are gathered, as well as the branches of the old trees, should be preserved for the purpose of burning on the land: and while doing this, as much of the land itself should be burnt as can conveniently be done. This, with the ashes of the wood, and bits of charcoal, make an excellent compost, which should be thoroughly worked into the ground as deep as it has been plowed or trenched, as well as a sufficient quantity of well-rotted manure. Should these conditions be complied with, the consequences would be, the land, which some might consider exhausted, would be restored to its pristine purity and productiveness.

[The above is an interesting topic; and while we agree with Mr. V. in regard to the mode of overcoming the evil, the common theory on the subject by no means accords with our own views.—Ed.]

HOW TREES GROW.

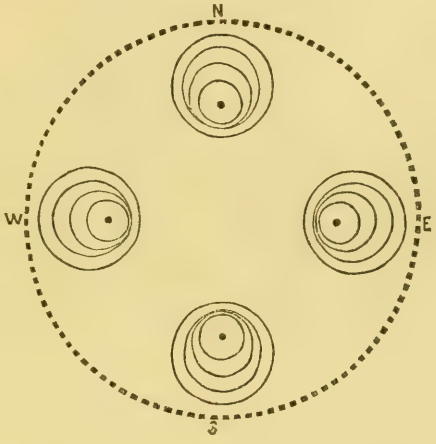
"That is a fine piece of Oak," remarked an experienced and very intelligent person the other day while looking at the section of one of the old principals of the chapel roof of Hampton Court; "how fast it grew on the south side!" "How do you know that to have been the south side?" was the reply. "Oh! you will always find that it is the south side of an Oak tree which grows fastest." It was not the first time that such an assertion had met our ears; but we had imagined the opinion to be confined to a few very old-fashioned gardeners and woodmen; in this we were mistaken. Let us then endeavor to disabuse the horticultural and arboricultural mind of what is surely a great error.

Timber is formed by the action of leaves, and in no other possible manner. That is a law to which there is no exception; and there we take our stand. The quantity of timber will be in direct proportion to the area of leaves; that is to say, six leaves having a surface of twelve square inches will have as much timber-forming power as twelve leaves having the same surface. Such being the case, to say that a tree has always most timber on the south side is the same as saying that a tree has most leaves or a greater area of foliage on the south than on any other side. Is that true? Certainly not.

A tree grows near the north wall of a high house; on the side next the house, namely, the south side of the tree, there is least timber, while on the opposite or north side there is most. The following figure represents a circular wood, with four trees standing on its circumference at the cardinal points, the interior of the wood being crowded. At N the principal formation of timber will be on the north side of the tree; at W on its west side, and at E on its east side. If a tree grows singly, without any hindrance to its regular development, it will have the same quantity of foliage on each side, and the production of timber will be as uniformly concentrical as could be represented by successive circles drawn by a pair of compasses. In all these cases the excess of timber on the south side does not take place; no doubt at the point S on the circle, which represents the south, most timber

will be formed on the south side, but without any greater difference than will be found at E, N, and W. Now this we take to be an exact statement of what happens in the cases supposed ; and if so, the popular notion to which we have alluded is disposed of.

The reason why there is most timber at N, E, W, and S on the above circle is, not that trees are exposed to one point of the compass more than another, but that the letters represent the outside of the wood. On that side branches form most abundantly, leaves are larger, and the roots have more space than they can have on the side next the interior of the wood. Most wood is formed at S because there is most timber-forming power in action there, not because it faces the south ; as, indeed, is plainly shown at



N, which has least timber on the south side. Let any one living on the south coast examine the trees that first catch the sea spray, and we will engage that he will find, without an exception—unless the sea spray is inoperative, as happens to Pinasters, Evergreen Oaks, and some others—that the smallest quantity of timber is on the south side. For there the branches are broken by gales, the buds are nipped by salt, and the leaves are perpetually perishing under the influence of oceanic action.

Doubtless it often happens that the south side of a tree has most timber, owing to a variety of local causes, especially exposure to cold, cutting northerly winds acting during the spring upon their side. But it is evident that the excess of timber in such a case is not due to the aspect being southern, but to the impossibility of timber being formed on the northern side, owing to injury arising out of the causes we have mentioned. Were the injurious influences to proceed from the southward, then there would be most timber on the north side.

To some this little explanation may seem trifling ; but even if the matter itself deserved to be so considered, that can never be a waste of time which

establishes the minutest point of truth. In gardening most especially, where false inferences are so common and injurious, it is of the first importance to seize upon every opportunity of showing the difference between what is termed *post hoc* and *propter hoc;* that is to say, between an accidental occurrence and a necessary consequence.—*London Gardener's Chronicle.*

NEW YORK PIPPIN APPLE.

BY D. L. ADAIR, HAWESVILLE, KY.

The best apple we have in southwestern Kentucky, southern Indiana, and Illinois, I think, is, without doubt, the apple generally bearing the name at the head of this article. The name is, no doubt, a synonym, and Western pomologists have puzzled themselves no little to give it a proper one. In some nursery catalogues it is represented as identical with Monmouth Pippin, a New Jersey apple, smaller, and only second or third-rate, and not near so good a keeper. Some make it identical with Newark Pippin, a smaller, but first-rate yellowish green apple, which is dissimilar in almost every respect, and which is here a fall or early winter apple. I first received the New York Pippin under the name of Funkhouser, which name it received from a German gentlemen of that name in Illinois, who, it is said, first introduced it there; and I notice that at the late session of the Illinois State Horticultural Society, after mature deliberation, they voted that it should be henceforth known as the *Carolina.* Against this I beg to enter my protest, as we have here, along the Ohio Valley, an apple bearing that name which is very popular and very good, but quite unlike the fruit under consideration. The Carolina is a deep red apple, regularly conical, and not so large. The trees are as dissimilar as the fruit. The wood of the Carolina is a very light yellow, while that of the N. Y. Pippin is very dark, and at the forks of the young shoots, and where the spurs put out, there are enlargements on the wood, sometimes as large as a boy's marble, while the Carolina has nothing of the sort on it.

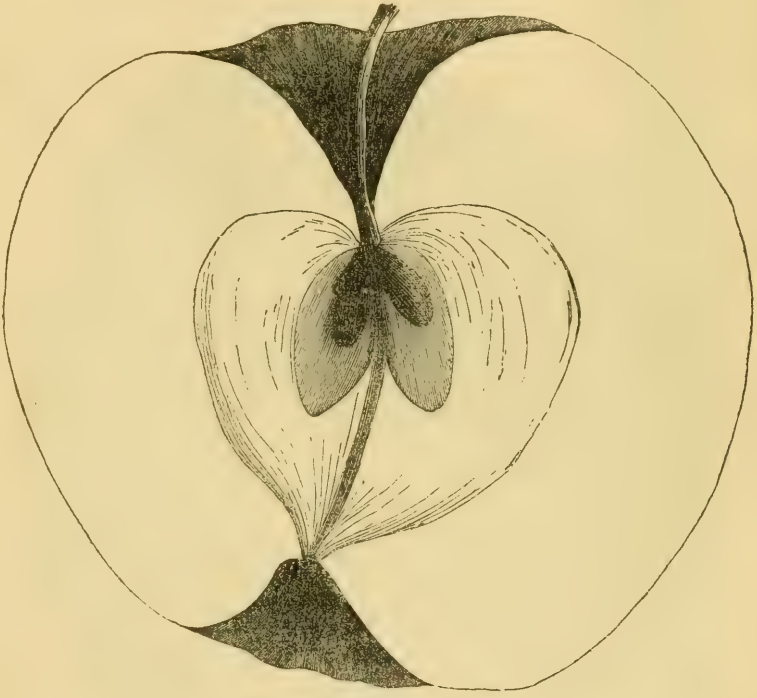
I am told that there is no apple by that name known in New York, and, so far as I know, it is not described in any fruit book; but as it is our best winter apple, I should like to know its true name. I therefore send you a drawing of it, and the following description:

Fruit roundish, flattened, often conical, irregular, one-sided, angular, with one or more prominent ribs, large to very large; the specimen from which the drawing was made weighed seventeen ounces—weight generally eight to seventeen ounces;—*color* greenish yellow, almost entirely overspread with light red, and over that irregular deep red stripes, often breaking into blotches and dashes at the base; brownish green specks at intervals of a quarter to half an inch all over the fruit;—*stem* medium, rather slender;—*cavity* deep, generally triangular, irregular, greenish russety to the surface;—*calyx* large, open;—*basin* wide, deep, furrowed;—*flesh* white, slightly tinged with yellow, tender, subacid, aromatic;—*skin* thick, tough, and leathery;—*seeds* large, dark brown, plump, with an enlargement on one side of the small end;—*quality* "very good" to "best;"—*season*, October to June.



NEW YORK PIPPIN APPLE.

It is the best bearer I know of, not excepting the *Jennetting*; it seldom or never fails to bear a good crop, which is owing to its having a peculiarity that I have never noticed in any other apple, which is this: in the spring it sets large clusters of bloom buds, but only the outer circle expand while the others remain dormant, and in case the first bloom set fruit and escape frosts, those reserve buds wither and fall off; but in case of any fatal accident to the first bloom another circle expands, and even though the bloom be destroyed twice or thrice, there is still a chance for fruit.



NEW YORK PIPPIN APPLE.

[We do not remember any apple around New York answering to Mr. Adair's description. At first we thought it might be the Twenty Ounce, but the description will not answer. The description and drawing both answer more nearly to the Monmouth Pippin, which is here a large and fine apple. We should be better able to judge if Mr. Adair would send us a specimen in its season. Mr. A. gives good reasons why it should not be called Carolina, and we hope they will be heeded.—Ed.]

THE NEGLEY PEAR.

(See frontispiece.)

BY JAMES S. NEGLEY, PITTSBURGH, PA.

Upwards of fifty years ago my grandfather leased a lot in East Liberty, to a man by the name of Wolff, who, at that early period, was noted for his skill and taste in Horticulture. He soon covered his lot with fruit-trees, which was quite an undertaking at that time; but he did not remain to enjoy the fruit, but sold his lease to another person. The pear-tree in question stood near the house, and thus escaped the accidents which destroyed many of the other trees. It still remains, a fine old healthy tree, never failing to produce a crop of its delicious fruit. As to its origin, there is no doubt but it is a seedling; this is substantiated by the opinion of those persons who were familiar with the trees when planted. Another very strong evidence is the fact that there are no other trees of a similar age of the same variety in the neighborhood. My grandfather had over fifty acres in orchard at that time, containing every variety of fruit which could be obtained, among which was every other variety of fruit in Wolff's garden, except this pear. Now, if its quality had been known, or it had been a grafted tree, he would have had it, or it would have found its way into some of the old pear orchards of the neighborhood. But it remained in its isolated position, little known, until within twelve or fifteen years, although grafts had been taken off as early, perhaps, as twenty-five years ago. The tree which produced the specimens sent to Mr. John Jay Smith last summer, grows in my uncle's garden, in rather an unfavorable situation for the pear. It was the only variety out of fifty which bore last season. It has not failed to produce a crop since it commenced to bear, though I fear we have injured it this season by removing all the young wood for buds and grafts. The following brief description of the tree and fruit may be interesting:

Tree vigorous, upright, pyramidal, and very symmetrical in growth; comes early into bearing; grows free on both pear and quince stock.

Wood very clean reddish brown, stout, and short-jointed; fruit-buds very abundant, sometimes covering all the young wood.

Foliage abundant, of a rich reddish green; remains on the tree until late in autumn.

Flowers large, not always in compact clusters. *Fruit* above medium, though some seasons very large, obtusely obovate, nearly regular, sometimes a perfect pyriform. *Skin* a rich lemon, shaded with bright crimson, quite free from specks or imperfections. *Flesh* white, tender, moderately melting, very juicy, but firm. *Flavor* rich saccharine, sprightly, vinous, highly perfumed, and delicious. *Core* of medium size. Hangs a long time on the tree; does not rot prematurely; is in season from last of August to the end of September. It commands a higher price than any other pear in this market of its season.

This pear was exhibited by me at the Ohio Pomological Congress, when held in Cincinnati. The president, Mr. Ernst, mistook it for the Flemish Beauty, until he had tasted it. It was named the Negley Pear by the Fruit Committee of the Pittsburgh Horticultural Society the season before; it then obtained a special premium, and last season was considered by the Fruit Committee of the Agricultural Society as the best pear on exhibition.

Mr. Chas. Downing wrote me in September, saying that it was the most beautiful pear he ever saw, but did not think the flesh as melting as could be desired, which was, no doubt, the case with those sent him, as they were pulled before being ripe, and they lose flavor if ripened off the tree. I would hesitate to recommend this pear so highly, for fear of having my motives questioned, were it not so highly esteemed in this neighborhood, and the character given by me so easily sustained by reference.

LOVE OF HOME—RURAL EMBELLISHMENTS.

BY C. N. BEMENT.

There are few things better calculated to attach us to our homes—where the social virtues love to congregate, and to dispense their blessings—than rural embellishments. This is true whether we apply the term to our neighborhood, or individual abode. The public grounds about the great cities of Europe, some of which comprise an area of five hundred acres, are the theme of general admiration, the theatres of healthful exercise and recreation, and the sources of high intellectual enjoyment. The lesser towns, villages, and cities, even of our own country, owe more of their charm and interest to the trees and plants which embellish their squares, streets, and grounds, in the eye of a man of taste, than to any ostentatious show of brick and mortar; more to the beauties of nature than to the works of man. Nay, the highest efforts of human intellect are in vain put in requisition to imitate the handiwork of the Creator. And when we come down to suburban residences, and even to the unostentatious abode of the farmer, how are their beauties heightened, and their value enhanced, by a screen of ornamental trees and a well-kept garden.

Loudon informs us, that in travelling from Strasburg to Munich, he passed through a continued avenue of fruit and forest trees, planted on both sides of the highway, for more than one hundred miles. Who that has visited our beautiful city of Poughkeepsie, or that has passed through New England in summer, has not admired in some of the villages the beautiful trees with which they are in a measure enshrouded.

As to the effect of planting upon the beauty of the landscape, the late Mr. A. J. Downing, in a well-written article upon this subject, justly remarks: "Many a dreary and barren prospect may be rendered interesting, many a natural or artificial deformity hidden, and the effects of almost every landscape improved, simply by the judicious employment of trees. The most fertile country would appear but a desert without them, and the most picturesque scenery in every part of the globe has owed to them its brightest charm. Added to this, by recent improvements in the art of transplanting, the ornamental planter of the present day may realize, almost immediately, what was formerly the slow and regular production of years."

As to the effect of planting and gardening *upon the body and mind* of those who engage in these pursuits, we offer the following extracts from Loudon's Suburban Gardener; and we recommend them to the special notice of all gentlemen who are troubled with dyspeptic or hypochondriac affections.

"There is," says our author, "a great deal of enjoyment to be derived from

performing the operations of gardening, independently of the health resulting from this kind of exercise. To labor for the sake of arriving at a result, and to be successful in attaining it, as cause and effect, is attended by a certain degree of satisfaction to the mind, however simple or rude the labor may be, and however unimportant the result obtained. To be convinced of this, we have only to imagine ourselves to be employed in any labor from which no result ensues, but that of fatiguing the body, or wearying the mind ; the turning a wheel, for example, that is connected with no machinery, or if connected, effects no useful purpose ; the carrying a weight from one point to another and back again ; or the taking a walk without any object in view, but the negative one of pursuing health. Thus it is not only a condition of our nature, that in order to secure health we must labor ; but we must also labor in such a way as to produce something useful or agreeable. Now, of the different kinds of useful things produced by labor, those things surely which are living beings, and which grow and undergo changes before our eyes, must be more productive of enjoyment than such as are mere brute matter,—the kind of labor and other circumstances being the same. Hence a man who plants a tree, a hedge, or sows a grass-plat in his garden, lays a more certain foundation for enjoyment, than he who builds a wall or lays down a gravel walk; and hence the enjoyment of a citizen whose recreation is at his suburban garden, must be higher in the scale than that of him who amuses himself in the plat round his house, with shooting at a mark, or playing at bowles.

"One of the greatest of all the resources of enjoyment resulting from the possession of a garden," continues our author, "is the endless variety which it produces, either by the perpetual progress of vegetation which is going forward in it to maturity, dormancy, or decay, or by the almost immeasurable kinds of plants which may be raised even in the smallest garden. Even the same trees, grown in the same garden, are undergoing perpetual changes throughout the year ; and trees also change in every succeeding year relatively to that which is past; because they become larger and larger as they advance in age, and acquire more and more their characteristic and mature form. Independently of the variety of change resulting from the variety of plants cultivated, every month throughout the year has its particular operations and its products; nay, it would not be too much to say, that during six months of the year, a change takes place, and is perceptible in the plants of a garden every day; and every day has in consequence its operations and its products."

In conclusion : A bountiful Providence has given the vegetable kingdom for our sustenance, employment, and highest intellectual enjoyment; and has scattered these elements of happiness, with a profuse hand, everywhere within our reach. It is left with us to enjoy them in a greater or less degree as we learn to appreciate their value, and exert ourselves to apply them to their proper use. The brute is content to satisfy its wants. Man, the lord of creation, should have a higher aim—because he has higher sources of enjoyment than the brute, and higher duties to perform ; he is the husbandman appointed to take care of and nurture the great vineyard, and to carry out the wise purposes of the all-bountiful Giver.

A taste for flowers, and the external rural embellishments of the houses and grounds, we are happy to say, is everywhere springing up. Besides, its strong tendency to multiply attachments to home is among the best safe-

guards of virtue, and, furnishing sources of delightful recreation, it is highly conducive to intellectual and moral improvement.

Our advice to the young is to cultivate a taste for rural embellishment, as a preventive of bad habits, and as the source of substantial and innocent pleasures.

THE PANSY.

BY J. H. FRY, NEW BRIGHTON, STATEN ISLAND.

The beauty of this plant can only be fully appreciated when seen under good cultivation ; for the Pansy, above all other plants, *must* have a rich, light soil to develop its good qualities, both as regards size of flower and depth of color. Experience shows that to grow Pansies in what might be called good soil for other plants, but too loamy for this, only produces small flowers and thin petals. Having seen the same variety under both treatments, I am convinced of the fact. Half a dozen good varieties are plenty to start with. Plant them out in a situation not exposed to the mid-day sun ; save seed from the largest and most distinct flowers as early in the season as possible. Although there are a great many varieties under this name, yet it is somewhat difficult to keep them through the summer season. The best method for obtaining a good crop of plants and flowers in the spring is, by sowing seed at the proper time, and relying entirely upon seedlings every season ; for, depend upon it, you will get from young, vigorous plants finer and a much larger quantity of blooms, than from old stunted plants that are kept from year to year ; and as variety is charming, that you will obtain also. If seed are sown the latter part of July, or beginning of August, in a frame, good plants will be produced by October. Prepare another frame with well-rotted manure and leaf-mold, press it well, and fill to within six inches of the glass. Set the plants out six or eight inches apart each way. In November they will commence to bloom, and keep on through the winter if well protected from the frost. In March and April they will flower very freely. As soon as the weather will permit, plant them out in a half-shady situation, and during the months of May and June they will be interesting objects.

The best plan for obtaining seed for another season is by leaving a few plants of the largest and most distinctly marked flowers in the frame, where you can bestow a little extra care on them by watering when necessary, and also for gathering the seed; for, if left too long, the capsules will burst, and you will be likely to lose most of it. Even if grown as a frame-flower only, like the Neapolitan violet, the Pansy will pay for the trouble.

[With his communication, Mr. Fry sent us some specimens of his flowers, which were good evidence of his skill and the value of his mode of growing the Pansy.—Ed.]

EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, &c., intended for the perusal of the Editor, and packages by Express, should be directed to the care of C. M. Saxton, 25 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."

WE are fearful that some of our friends will think that we have neglected them; but the simple fact is that we have lately been subjected to so great a pressure that we have been unable to do what we could wish. Hereafter, however, we hope to be able to do better. We have received the proceedings of several Horticultural Societies, and thank our friends for sending them. We shall in the future endeavor to make room for such matters promptly, whenever they are of general interest.

MR. BRIGHT'S NEW BOOK.—Bright's Single Stem, Dwarf, and Renewal System of Grape-Culture, adapted to the Vineyard, the Grapery, and the Fruiting of Vines in Pots, on Trellises, Arbors, &c.—We have read Mr. Bright's book with peculiar interest, as setting forth, on the subject of "inside borders," a principle which we have thoroughly tested for many years, and know to be sound. We have already so fully endorsed it elsewhere, that it would seem to be unnecessary to say any thing further here. We have experienced no small difficulty in getting a good hollow wall built, and are therefore inclined to regard Mr. Bright's detachment an improvement, since it secures the border from external influences under all circumstances. In his article in our present number, Mr. Bright has supplied what is a defect in his book, viz., an abundant supply of water in tanks which shall be entirely under control. Another new feature in Mr. Bright's work is the "single stem renewal system." This, to us, is entirely new, and is enforced with so many good arguments, that we bespeak for it a fair and thorough trial. By confining the energies of the vine to the production of one thing at a time, we should naturally expect to obtain that thing in perfection, whether it be wood or fruit; and this is what Mr. Bright proposes to do. There is one particular, however, in which our practice would differ from Mr. Bright's. We do not like vines from layers, and we should therefore prepare plants from eyes or cuttings, and with these replace the old vines as circumstances should demand. Before replacing any vines, however, we should cut the old ones down to within a foot of the ground, and rely upon forcing a dormant bud; and we should expect to succeed in so doing in a large proportion of cases, and get a good growth. If we failed to do this in a satisfactory manner, we should then resort to replanting. But this is a matter which does not detract from the merit of Mr. Bright's "single stem renewal system," the great point which he here makes being the production of more and better grapes than can be obtained by any of the systems now in use. We hope that this renewal system, whether applied to graperies or vineyards, and also the inside borders for graperies, will meet with a fair and impartial trial.

ROESSLE'S CELERY BOOK.—How to Cultivate and Preserve Celery. By Theophilus Roessle, of the Delavan House, Albany, N. Y. Edited, with a Preface, by Henry S. Olcott.—Mr. Roessle has for some years been known as a successful grower of Celery, and the present volume gives us the details of his practice. In some respects we should be loath to follow it. For example, he says Celery seed should be sown an inch deep. We doubt whether one seed in a hundred will vegetate at that depth; certainly not very speedily. The better and more usual plan is to sow the seed about a quarter of an inch deep. His manner of treating the plants in the hotbed we consider defective. It is a good plan, as he recommends, to let the weeds first come up; but he greatly errs in spading over the beds after destroying them, for he thereby insures the growth of a second crop, and his bed is no better than at the beginning. We have tried this too often not to be familiar with the result. Our practice is to disturb the soil as little as possible in destroying the weeds: the celery (or whatever seed may be sown) then comes up comparatively clean. The system of blanching by two earthings is quite common among gardeners; those, however, who wish to produce extra large and fine heads, repeat the earthing a number of times; but this repeated earthing Mr. Roessle condemns. There must be some merit in a plan, however, which produces fine, crisp, solid heads weighing from seven to nine pounds each. The plan recommended for preserving the plants is a good one, and has been very successful in the hands of the author. The secret of his success, however, in Celery growing, consists, in our opinion, in the thorough manner in which his trenches are prepared; and his views on this point should be carefully read. The volume is handsomely printed in large type, and the editor's finished pen is manifest on every page. The work is published by the author, but may be had of Saxton, Barker, & Co., 25 Park Row, New York, for $1.

OLD JAVA COFFEE-POT.—Some considerate friend has placed on our table (a good place for it, by-the-by) an "Old Java Coffee-Pot." We mean to put the coffee through according to directions, and expect to be able to report "flavor" in our next. In the mean time, Bartlett and Lesley will continue to manufacture it at 426 Broadway, New York.

NEW SEEDLING CAMELLIA.—We have received from Mr. Buchanan a very fine Seedling Camellia, named *Mrs. Buchanan*, which we shall hereafter describe with a drawing.

DIOSCOREA BATATIS.—Mr. Chorlton has sent us some very fine roots of the Dioscorea, weighing two and a half pounds each. We have eaten nothing better in this way.

ISABELLA WINE.—We are indebted to Mr. Bartholmew, of Westfield, Chatauque Co., N. Y., for samples of Isabella and Blackberry Wines, the latter being very good of its kind. The Isabella is a real wine, without any foreign addition whatever, is as clear as a crystal, with a fine aroma, and comes fully up to the mark of a first-rate article.

THE HUMAN VOICE; its right Management in Speaking, Reading, and Debating, including the Principles of true Eloquence, together with the Functions of the Vocal Organs; the Motion of the Letters of the Alphabet; the Cultivation of the Ear; the Disorders of the Vocal and Articulating Organs; Origin and Construction of the English Language; proper Methods of Delivery; remedial Effects of Reading and Speaking, &c. By the Rev. W. W. Cazalet, A. M., Cantab. New York, Fowler and Wells, 308 Broadway.—This is by no means the least meritorious of the useful and popular works issued by the Messrs. Fowler and Wells. While dissenting from some of the views of the author, we find so much that is useful, and that ought to be more generally known and understood, that we give the work a hearty commendation. Though it seems to have been written mainly to meet the wants of special cases, we know of no class of readers who would not be greatly benefited by giving it a careful perusal.

ADDRESS delivered before the New York State Agricultural Society, at the Annual Meeting, Albany, February 9, 1860, by Abraham B. Conger.—We are indebted to Secretary Johnson for a copy of the above Address, received too late, however, for notice in our present number. We shall read it hereafter.

THE HISTORICAL MAGAZINE, and Notes and Queries concerning the Antiquities, History, and Biography of America. April, 1860.—An able publication, devoted exclusively to our domestic history and antiquities, and embracing among its contributors the best historical writers of the day.

BROOKLYN HORTICULTURAL SOCIETY.—The Spring Exhibition of this society was held at the Athenæum on the 11th, 12th, and 13th of April. The exhibition will take its place among the best which the Society has held, and in a pecuniary point was successful beyond what was anticipated. Had the result, in this respect, been otherwise, the citizens of Brooklyn would, for some years at least, have been deprived of a means of enjoyment which they have been quite too tardy in appreciating.

In all floral exhibitions there is some one feature which gives character to the scene, and on this occasion it was the *Azalea*. Large, skilfully grown, well covered with bloom, diversified in their colors, they doubtless met the requirements of the most fastidious taste; and while we have no fault to find in these respects, we should be glad if hereafter some of our Azalea growers would abandon the low, flat, spreading form now almost universal, and adopt a shape somewhat approaching a pyramid or a shaft. It would give greater diversity of form, and thus add vastly to the interest of the exhibition, while at the same time it would give additional scope to the gardener's skill. Among the "solid men" of the exhibition may be mentioned Messrs. Van Voorst, Langley, Menand, Hoyt, Patrick, Rogers, Low, &c., represented by their respective gardeners. Of the specialties of these gentlemen we shall have something to say on another occasion. Too much praise cannot be bestowed upon the President, J. W. Degrauw, Esq., to whose unflagging energies and enthusiasm the public are indebted for these beautiful floral exhibitions.

Mr. Fleming, gardener to C. Van Voorst, Esq., of Jersey City, exhibited a rare collection of plants, and their fine condition showed him to be a careful and skilful man. Among the most noteworthy, we may mention a number of variegated leaved Begonias; six Caladiums, the finest being Chantinii and argyrites; Medinella magnifica; Rudgea leucocephala, a new plant with large clusters of white flowers like a tuberose; five Orchids in bloom, viz., Oncidium lucidum guttatum, Dendrobium aggregatum, D. Griffithii, Odontoglossum cordatum, and Cattleya Mossiæ, the last a splendid plant; Rhapala corcovadensis, a splendid evergreen plant, and believed to be the largest in the country; Guzmannia picta, Maranta vittata, Aralia reticulata, Ananassa sativa variegata, Dracæna indivisa, several fine Epacris and Azaleas, and an Anœctochilus setaceus, the last, in our opinion, the finest plant in the room.

Mr. Menand, of Albany, exhibited a large collection of plants, embracing a number of rare and finely grown specimens, among which the following may be mentioned: Dammara Brownii, a new plant from Australia; Caladium Chantinii, Maranta eximia, M. vittata, and M. regulis; Rogiera cordata, Blumea cratiliense, Viburnum nitidum, a splendid specimen nearly eight feet high, and covered with bloom; Acacia pubescens hybrida; several beautiful Ericas; Andoninia capitata; Melaleuca fulgens; Pimelea decussata and P. Hendersonii, beautiful specimens; Medinella magnifica; Tradescantia discolor vittata; Dendrobium nobile; a large number of Ferns, and many other fine and rare plants.

From Mr. Gordon, gardener to E. Hoyt, Esq., Astoria, a splendid collection of large and well grown Azaleas, such as Iveryana, extranii, optima, amœna, Beauty of Europe, &c.; Epacris campanulata rubra grandiflora; Eriostemon buxifolia and E. intermedia; Aphelexis purpurea macrantha; Boronia tetrandra and B. Mollinii; four beautiful Ericas, including ventricosa coruscens and coccinea minor; Burchelia capensis, and other fine things.

From Mr. Murray, gardener to J. Patrick, Esq., Brooklyn, a collection of finely grown plants, embracing several beautiful Azaleas; Eriostemon intermedia; Lachenaultia formosa, Tropœolum tricolor, Chorozema Henchmannii, one of the best grown plants in the room, and very pretty; Boronia pinnata, and a number of other good things.

From Mr. Hamlyn, gardener to W. C. Langley, Esq., Brooklyn, a very choice collection of plants, among which were Marantas, Crotons, Lycopodiums, Ferns in great variety, Azaleas, Begonia ricinfolia maculata, Phœnix dactylifera, Bahmeria argentea, Tradescantia discolor argentia, Pitcairnia punicea, Cissus discolor, Rhapala corcovadensis, Farfugium grande, some very beautiful Ericas, and a number of other plants.

The other collections contained mostly the same kinds of plants, and it is not necessary to repeat the names. Mr. Rauch showed a large collection of plants, including Roses, Azaleas, Camellia A. J. Downing, (very fine.) Begonias, Ericas, Aralia quinquifolia, Aspedistria elatior variegata, Boronia crenulata, Selaginella paradoxa, Bilbergias, and many other pretty things.

Mr. Dailledouze exhibited a fine lot of Monthly Carnations, some of the best being La Paon, Indispensable White, La Pureté, De Beranger, Grenadier, Haten, Le Grandeur, Variegata. Also a fine bloom of the new Rose America, and the best collection of Pansies we have ever seen.

Mr. Hudson presented a very good design for a small garden, in working order.

Mr. Weir exhibited Pot Plants, Bouquets, &c., and several pots of Spergula pilifera, a beautiful moss-like plant proposed as a substitute for grass on lawns.

From Messrs. Poynter & Foddy, cut flowers, Roses, &c. From Mr. Templeton, very fine Cinerarias: some good ones also from Mr. Egan. From Mr. Park, a pair of Hand Bouquets. From Mr. Zeh, a basket and collection of fine pot plants. From Mr. Egan, a plate of Snap Beans. From Mr. Schmeig, Lettuce and Radishes. From Mr. Jones, some Hothouse Grapes.

Mr. Hochstein exhibited a finely executed design for a Diploma in water colors, very appropriate for a society of this kind. We append a list of the successful competitors, which must complete our remarks for the present, with the announcement that the Society will give another exhibition about the second week in June.

Mr. Menand took *first* prizes for the best collection of plants, $18; for best Cacti, $6; best specimen plant, $4; best Ericas, $4. *Second* prizes for Greenhouse plants, $8; for Labeling, $1.

Mr. Fleming took *first* prizes for best four Stove Plants, $8; best six variegated leaved plants, $6; best single do., $3; best two Orchids, $5; best single do., $3; best cut Camellias, $3; special prizes for ornamental leafed plant, $2, and Caladiums, and Begonias, $2.

Mr. Rauch took *first* prizes for best six Roses, $5; best Labeling, $2. *Second* prizes for collection of plants, $10; for Flower Basket, $3; for three Azaleas, $3.

Mr. Hamlyn took *first* prizes for best Ferns, $8; best four Ericas, $8; best two Ericas, $5; best four Gloxinias, $4; best 6 Pinks, $3. *Second* prizes for variegated leaved plant, $2; for single Azalea, $2.

Mr. Gordon took *first* prizes for best eight Greenhouse plants, $12; best six Azaleas, $10; best single Azalea, $4. *Second* prizes for four Ericas, $6.

Mr. Murray took *first* prizes for best three Azaleas, $5; best single Rose, $3. *Second* prizes for four Greenhouse plants, $5; for single Erica, $2; six cut Camellias, $2.

Mr. Weir took *first* prizes for best Parlor Bouquet, $5. *Second*, for two Greenhouse plants, $3.

Mr. Zeh took *first* prizes for best two Greenhouse plants, $5; best Chinese Primrose, $1. *Third*, for Hand Bouquets, $2; and Basket, $2.

Mr. Reddy took *first* prizes for best three Scarlet Geraniums, $4; best single Fuchsia, $2.

Mr. Jones took *first* prize for best two bunches of Grapes, $6. *Second*, for specimen plant, $2.

Mr. Templeton took *first* prizes for best four Cinerarias, $4; best cut flowers, $5. *Second*, for six Azaleas, $6; for three Scarlet Geraniums, $2.

Mr. Tanner took *first* prizes for best three Fuchsias, $4; best six Hyacinths, $3; best Annual, $1; best six heads of Lettuce, $1; Bush Beans, $1.

Mr. Schmeig took *first* prizes for best double Chinese Primrose, $1; best six stalks of Rhubarb, $1; best Radishes, $1.

Messrs. Dailledouze & Tellar took *first* prizes for best four Auriculas, $3; best four Monthly Carnations, $3.

Messrs. Poynter & Toddy took *first* prizes for best twelve Pansies, $1; best Flower Basket, $5.

Mr. Walter Park took *first* prize for best Hand Bouquets, $4.

Mr. Hudson took *second* prize for Hand Bouquets, $3.

Mr. Egan took *first* prize for best Sea-kale, $1.

Mr. Buchanan was awarded a special prize for his fine seedling Camellia, Mrs. Buchanan.

In conclusion, we congratulate the members of the Society upon their happy success, and hope it may act as a stimulus for increased exertion for the future. We would suggest that hereafter the names of the exhibitors be attached to their plants. We have endeavored to credit the proper owners, but doubtless have made some errors because of this absence of names.

THE AUSTIN STRAWBERRY.—Mr. Carpenter has shown us some plants of this new Strawberry, which are stout enough to bear berries of almost any size. We know Mr. Carpenter so well, that we do not believe he would have anything to do with it unless he knew it to be what it is represented. Plants will be sent to our office when in fruit, where it may be seen; and we shall then tell our readers just what it is in plain English.

DEATH OF MR. ERNST.—The death of this well-known Horticulturist is announced in our Western exchanges. Can any of our readers furnish us with a brief notice of his life?

NEW PLANTS.—Mr. Buchanan, of New York, has recently received an accession of new plants, a list and description of which we are now preparing.

PATENT OFFICE SEED.—We learn that no more seed (at least for the present) will be issued from the Patent Office. We hope that this condition of things will continue until a wiser policy is adopted than that which has heretofore marked the distribution of seed by the government at Washington.

EVERBEARING MULBERRIES.—A. F. can safely plant Downing's Everbearing. It is a very fine fruit, and hardy around New York and along the Hudson. We have never seen the fruit of the others alluded to, and therefore cannot speak of them from personal knowledge.

DEATH OF HON. B. V. FRENCH.—We regret to learn that this distinguished Horticulturist died at his residence in Dorchester, Mass., on the 10th inst., aged 68. He was one of the prominent members of the Massachusetts Horticultural Society, and for many years has been known as an enthusiastic promoter of horticulture.

A good mattress is so important an accessory to sound sleep, the best restorer of tired nature, that a good one within the means of the mass of people ought to be regarded as a blessing. Something of this kind is manufactured by Mr. Kittle, 476 Broadway, N. Y., at a very reasonable price; and we feel convinced that those who have once used it would not willingly be a night without one. If any class are entitled to the blessing of good sound sleep, it is certainly those who delve in the ground. Articles of this kind should be more commonly advertised in Horticultural magazines.

THE BELLE LUCRATIVE PEAR.—Mr. Wright, writing from Oberlin, says, "I see in the last number Solon Robinson mentions Dr. Grant's list of the best twenty varieties of Pears, in which list the Belle Lucrative, decidedly the richest Pear we know of in this excellent Pear region, is not mentioned. How is this?" Though not mentioned in the list itself, it is added at the end as a good substitute for either of the autumn varieties. We think so highly of it as a dwarf, that in selecting a list of three kinds we should make Belle Lucrative one of them.

THE YOUNG FARMER'S MANUAL.—Messrs. Saxton, Barker, & Co. have in press a large 12mo volume, with this title. It details, in a plain and intelligible manner, those operations most essential to the success of the young farmer, giving full instructions for the erection of buildings, fences, gates, &c. An important feature is the "Farmer's Workshop," with ample directions for the selection, use, and care of implements, all of them much neglected subjects. The work will be abundantly illustrated. The author is Mr. S. E. Todd, one of our most intelligent and successful farmers, who understands what he is about. We shall notice the book more fully hereafter.

IN Mr. Eaton's article on Grape-Houses, p. 173, line 17 from bottom, a sentence should begin with the words, "In windy weather," &c., and end with the word "control." On p. 171, line 6 from top, "out" should be "cut."

FRUIT-GROWERS' SOCIETY OF DELAWARE.—At the annual meeting of this Society, held in Wilmington, on March 21, 1860, the following named gentlemen were elected officers for one year:

President, H. F. Askew, M. D. *Vice-President*, Samuel Canby. *Corresponding and Recording Secretary*, Dr. Geo. Pepper Norris.

FRUIT-GROWERS' SOCIETY OF EASTERN PENNSYLVANIA.—We have received the following circular from this association, and would call special attention to it. The matters it treats of are of general interest, and we hope those to whom it is addressed will respond to it heartily. Mr. John Rutter, of West Chester, Pa., is General Chairman.

The committee for the County of Philadelphia respectfully call the attention of Fruit-Growers to the existence of this Society, the objects of which are to foster and encourage the introduction of new and desirable varieties of fruits, to give a correct and impartial description of them, and to aid in their dissemination.

In order to carry out these praiseworthy objects, we respectfully urge on all who take an interest in this subject, the importance of carefully conducted experiments in hybridizing our native with foreign sorts, and the production of seedlings from such hybrids, as well as from our well-known sorts, both foreign and native.

Beside the production of new sorts, there are doubtless many really desirable fruits already in existence which deserve to be better known; all such will be accurately described in the proceedings of the Society, if well-ripened specimens are forwarded to the committee at the proper season.

We therefore respectfully request all lovers of fine fruits to aid us in furthering the objects of this Society, by imparting such information as they may possess in reference to new fruits, or the improvement or deterioration of the older sorts, as well as the results (successful or otherwise) of any experiments they may have in reference to this object, such as peculiar modes of culture, the application of special manures, diseases, pruning, the destruction of injurious insects, or the preservation of fruits; and if these suggestions are carried out we may confidently anticipate the happiest results from the operations of this Society, not only in the dissemination of new and desirable fruits, but in preventing the dissemination of worthless sorts.

J. E. MITCHELL, *Chairman*, No. 310 York Avenue, Phila.

HARTFORD COUNTY (CONN.) HORTICULTURAL SOCIETY.—At the annual meeting held April 7th, 1860, the following officers were elected for the ensuing year:

President, Gurdon W. Russel, M. D. *Vice-Presidents*, J. S. Butler, M. D., Edward Bolles, A. W. Birge, Hartford; H. W. Mygatt, Farmington; N. W. Stanley, New Britain; Norman Porter, Berlin; Sheldon Moore, Kensington; Salmon Lyman, Manchester; E. A. Halcomb, Granby; H. A. Grant, M. D., Enfield; S. D. Case, Canton; T. C. Austin, Suffield; H. S. Collins, Collinsville; B. F. Seward, Southington; R. H. Phelps, Windsor; Sherman Steele, West Hartford; Wm. G. Comstock, East Hartford; Josiah Atwood, Newington. *Corresponding Secretary*, D. S. Dewey, Hartford. *Recording Secretary*, Mason C. Weld. *Treasurer*, P. D. Stillman. *Auditor*, S. H. Clark.

CATALOGUES, &c., RECEIVED.

Pomona Garden and Nursery Catalogue of Fruit and Ornamental Trees, Vines, and Plants, cultivated and for sale by William Parry, Cinnaminson, Burlington Co., N. J.—A good collection of plants, but the printer certainly was no pomologist.

Dennison's Tree and Plant Labels, in wood and zinc.—These would seem to be a good article, and are offered at a moderate price.

Geo. F. Needham's Descriptive Catalogue of Annual, Biennial, and Perennial Flower Seeds, embracing the choicest American, English, French, and German varieties. Buffalo, N. Y.—A small but choice catalogue.

Catalogue of Fruit and Ornamental Trees, Shrubs, Vines, &c., for sale at the Cheltenham Nurseries, on Oak Lane. Haines & Hacker, Cheltenham P. O., Montgomery Co., Pa.—A nice little catalogue.

Annual Report of the Agricultural Society of New Jersey for the Year 1859.—We have not yet had time to read it, but will notice it in our next.

First Annual Descriptive Catalogue of Greenhouse and Bedding-out Plants, Florists' Flowers, &c. Also, Foreign Grapes, Strawberries, Lawton and New Rochelle Blackberry. Flower Seeds, Vegetable Seeds, and Plants, cultivated and for sale by John Davies, at the East Hill Greenhouse and Flower Gardens, Ithaca, N. Y.—A choice collection, embracing the novelties of the season.

Catalogue of Hardy Grape-Vines and other small Fruits, Ornamental and Fruit-Trees, Shrubs, &c, cultivated and for sale by George Davenport, Dedham, Mass.—Very neat and choice.

HORTICULTURAL AGENCY.—Mr. Daniel Barker has opened a Horticultural Agency at Hartford, Conn. He is a reliable man, and we hope will be duly encouraged.

Hamilton County Fruit Gardens, College Hill, Ohio, A. H. Bailey, Proprietor.—A circular of wholesale prices.

Correspondence.

THE BELLE DE CHOISY CHERRY.—We have received the following letter from Mr. Downing, explaining the omission of this Cherry from the revised edition of the "Fruits and Fruit-Trees of America." The difficulty of making a complete catalogue is so great, that we wonder there are not more omissions.

"Your correspondent, T. E. M., of Chillicothe, O., notices the omission of the Belle de Choisy Cherry in the revised edition of the "Fruits and Fruit-Trees." I can only say that it was not intentional, and I can not account for it. It was either an oversight of my own or of the printer. If another corrected edition should be issued the Belle de Choisy will have its

place, as it is the *ne plus ultra* of cherries as to flavor, although a poor bearer, and will not be grown generally, except by amateurs; yet I have known a few instances where it produced abundantly. Coe's Transparent being a great bearer and nearly equal to it in quality, will in a great measure supersede it. CHAS. DOWNING.

DWARF PEARS—DEEP PLANTING.—*Mr. Editor:*—Your leader, p. 57, 58, I have carefully read, and the second time ran over it to have it fresh in my mind. Being one of the earliest Dwarf Pear growers in Mississippi, and an advocate of the Dwarf, and having to learn all about it from a dear-bought experience, I must, though in sincerity, reluctantly differ with you, yet, at the same time, I acknowledge the truth of all you say. This is "rather blowing hot and cold." But let me explain. I would plant the Dwarf Pear one to three inches below the union, depending upon the quality of land; yet I would prefer to plant no deeper than they grow in nurseries, *if they were grown right.* Just as well to have the Dwarfs die off from too deep planting, as live standing and do no good. I have had Dwarfs budded, or grafted, six to ten inches above earth, planted as my experience and as you direct; after remaining two or three years, some died, some broke off at junction, and many made no growth. I found those did best which had been worked low, particularly a lot I got from Hovey, so worked as to admit the junction to be, say one inch in earth. I then took up all others and put them deeper, so as to hide the Quince entire. I lost some, but on the whole I succeeded better. Since that time I have planted all below surface—meaning the junction. I have trees not over ten to twelve feet high, from which I have gathered some three to five bushels of pears, others of similar age not near as high, nor as thrifty; the D'Angoulême being the best bearer, though not any larger than others.

I have tried to insert the pear graft *on the Quince cutting* before putting out, thinking I might save time and get my tree lower worked. I succeeded with the only one I tried last fall, though it was put out under the north side of a fence and thus protected from the sun. I have some 2,000 cuttings put out, and will in a few days insert grafts on side of cutting without removing, (a little more trouble,) but it will not prevent the quince from growing, and if I succeed it may save one year. I am desirous of putting into orchard several hundred Pear Dwarfs, and will keep myself out of mischief by working them myself.

I insist that nurserymen should work Dwarfs so that they can be planted correctly, (as they grow in the nursery,) which I think will remedy much complaint; for really my experience is against Dwarfs while the Quince is above ground. Yours with respect,

Edwards, Miss. M. W. PHILIPS.

[We must put Mr. Philips down for a good-tempered man, who can discuss a point of difference without losing his patience. Since he agrees with us in the most essential points we made, we will consent, with him, to throw away the badly-worked trees, as being the most speedy method of disposing of the evil. Trees ought by all means to be properly prepared in the nursery: this can not be too strongly insisted upon. We hope he will continue his experiment of preparing the stock before planting, and let us know the result.—ED.]

EDITOR HORTICULTURIST: When a useful invention is introduced into domestic life, it very often happens that its merits are not always understood, and sooner or later we are apprised of some defect, or we are informed that there is another and a more useful article in the market, to serve the same or a better purpose: in such cases ventilation is always useful.

Thus it is in regard to the Saddle and Conical Boiler, recently invented for the purpose of heating with hot water; touching the merits of which I have read two articles in the March and April numbers of the HORTICULTURIST.

Having had some opportunity of seeing that apparatus at work in several places during the past winter, and being the owner of three boilers of a different pattern, now in active use, I ask leave to say a word in regard to it in the HORTICULTURIST.

The principles upon which hot water boilers should necessarily be constructed are few and simple, yet they seem not to be well understood, and are rarely attended to by practical gardeners.

To obtain the greatest amount of heat from a given quantity of fuel, and to retain that heat when obtained *within* the boiler, by retarding its rapid ascent through the smoke pipe and chimney, are matters of the first importance in every heating apparatus of this description. For example, the slightest examination will show that a judicious combustion of fuel is not always obtained in the grate and chimney process of heating our dwellings, and by applying the hand to the flues they will be found to be infinitely hotter than any part of the house intended to be heated, thus carrying away at least three-fourths of the heat produced, without affording much benefit to the house, or its inmates; hence the necessity of stoves.

Count Rumford's improvements in the construction of chimneys did little towards economy in the combustion of fuel, and nothing at all towards retaining the heat when produced. His whole aim was to make a chimney draw well; and this, in many cases, and especially in boilers for horticultural purposes, is too much of a good thing.

Economy suggests to the gardener and horticulturist some means and manner of heating their plant-houses other than the old brick flue system, at the rate of from twenty to fifty tons of coal during six months of the year.

Oxygen, that great supporter of all animal and vegetable life, is the prime element in the combustion of fuel. In the construction of the boiler, its introduction should be carefully provided for, through the grate bars of course; the area of which should be in proportion to the maximum extent of pipes to be heated, and directly from the atmosphere.

It is held by learned chemists and men of science who have elaborately investigated the subject, that the quantity of oxygen necessary to effect complete combustion, so as to produce the best results, should be in due proportion; that too much is as bad as too little,—too much consuming the fuel too rapidly, and driving off the heat—too little producing imperfect combustion, and great quantities of smoke.

The Argand Lamp affords a good example of complete combustion, and the principle it elucidates should not be forgotten in the construction of a heating apparatus. The chief difficulty Argand obviated by his invention, was in producing complete combustion of the oil, so as to keep the flame from smoking; this he effected by making the wick in the form of a ring, instead of the round cotton wick used in the old form of lamp, which was always attended with smoke and smell, because of its small extent of surface to the air. By A.'s invention the flame became a hollow cylinder, with a current of air ascending through the inside, so that its burning surface was more than doubled, and by means of a glass cylinder over the flame, a draught was created—sufficient oxygen supplied—complete combustion obtained—and the greatest possible amount of light yielded.

Rogers' Conical Boiler, introduced in England many years ago, gave satisfaction for a long time, but like the chimneys of our houses, the smoke-pipe and flue being in direct connection with the fire, a great quantity of heat was uselessly carried away. In addition to this defect in boilers of a larger size, the higher portion of the boiler was too remote from the fire to produce the best result; hence it is, that the smallest boiler of this pattern has proportionately greater power than the larger size. The reason of this is the well-known fact, that the relative effect of heat upon substances is in the inverse ratio of the squares of their distances from the fire; for instance, A and B are sitting at a fire; A is two feet distant from it, and B is four; the square of B.'s distance is four times the square of A.'s distance; therefore A is four times hotter than B, though only half the distance from the fire.

The improvement in the Saddle and Conical Boiler under consideration, is the introduction of the saddle within the cone, or rather one cone within another, each holding water, and connected together by small pipes, with sufficient space within the cones to allow the escape of smoke.

Now the advantage here is, the inner cone being completely closed at the top, holds in suspension the light floating particles of unconsumed fuel which would otherwise rush up the chimney, until its combustion is completed, assuming that a due quantity of oxygen is admitted: and a further and most valuable advantage secured is, this inner cone, at all times during action, is a cap full of intense heat which it retains, and retards in its ascent up the chimney.

Sufficient heat—slow combustion—requiring little attention—with little smoke, are the objects to be attained in the construction of every heating apparatus for horticultural purposes.

The Saddle and Conical Boiler referred to combines these qualities in a greater degree than any other boiler I have seen in use.

Brooklyn, April 18, 1860. B.

[We have several articles on the "boiler subject," which we shall print from time to time. Thus far they are written with good temper, and this we shall insist upon as a condition.—ED.]

NOTES ON THE GROWTH OF DIFFERENT VARIETIES OF THE PEAR ON QUINCE STOCK.—Last summer, in looking over a small orchard of Dwarf Pear-trees planted in the spring of 1857, I made the following hasty notes in regard to the vigor and general appearance of the different varieties. From the trees having had only three seasons' growth since planting, and there being in most cases but two or three of each variety, these notes must possess much less value than were it otherwise; and the future will no doubt show that some kinds which are now growing beautifully and promise to be perfectly successful on the Quince, are not to be relied upon for permanent trees; for it is now very well known that many kinds of the Pear will grow on the Quince as well as could be desired a number of years, and then, for some unaccountable reason, cease to thrive, and in a year or two, despite all the care of the most experienced cultivator, "go the way of all the earth." It is, indeed, this fact, as well as planting on improper soil, negligent pruning, and want of cultivation which has so frequently caused those who have not had sufficient experience in the matter, to raise the cry of "humbug" against Dwarf Pear-trees. We have now a short list of varieties which have been thoroughly tested, and proven to be perfectly adapted to the quince stock; and no person who has a proper soil need fear failure in planting these kinds, if he will only give them the necessary attention afterwards. Dwarf Pear-trees have become altogether too deeply rooted in the gardens and affections of almost all intelligent horticulturists of this country to need any defence from me against the attacks of those few who may have failed to be successful with them from local causes, their own ignorance, or neglect. I think that the most convincing proof of their value is to be obtained by visiting any of the fruit-gardens of this country where they have been introduced and carefully cultivated—looking at the beautiful "pyramids" loaded with fruit—generally fairer and better than can be grown on the "standard"—and then going to the nurseries, and seeing to what an extent the dwarf trees are propagated there in order to meet the rapidly increasing demand. One can not then fail to be convinced that dwarf trees are something of an "institution" after all.

I did not intend, when I commenced this article, to say anything which might look like an attempt to reopen the "Dwarf Pear War," but I could not resist the temptation to say a few words for dear favorites of mine which I have sometimes seen most shamefully slandered.

Having myself often felt the want of information in regard to the growth of different varieties of the Pear on Quince stock, I am led to make the following imperfect notes on the subject public, hoping in that way to induce others also to give their experience; so that in a short time we may have reliable information in regard to the habit of growth, and success or failure on quince, of almost every variety cultivated in the country. Such information would certainly be very valuable, especially to those who may be planting large specimen orchards, and of course desire to know what varieties to set on quince and what on pear stock.

We need very much a list of the pears cultivated in this country, classified under the heads of

"those which do remarkably well on quince," "those which thrive moderately," and "those which should not be dwarfed unless double-worked." It is to be hoped that the "Horticultural Societies" will take this matter in hand, and give us a complete list as soon as possible.

The following are the notes as taken last summer. The ground on which these trees are planted is a strong clayey loam, with a clay subsoil; it is quite moist, though drained so that water does not stand about the roots. Before planting it was deeply plowed with a three-horse plow; never has been subsoiled, though probably it would have been much better for it. The trees were carefully planted, and had a heavy mulching of long manure, which has been renewed every year since. The ground about them has been kept free from weeds and grass with the cultivator and hoe, and the trees have had a systematic pruning every spring, and some slight, though very little, "pinching in" during the summer. It will be seen that of 86 varieties, 78 are now doing well. The general appearance of the orchard is very encouraging.

Louise Bonne de Jersey.—This variety is probably unrivalled for dwarfing. It invariably grows vigorously, making a strong, healthy tree, and producing great crops of very fair fruit. The upper shoots should be shortened severely, particularly while the tree is young, as it is inclined to run up, and not develop the side branches sufficiently. Of over one hundred trees of this kind, there is not one which is not perfectly vigorous and healthy.

Duchesse d'Angoulême.—This is another of those kinds which seem perfectly at home on the quince; always grows freely, forms a handsome tree, and produces great crops of very large and handsome pears, which are of much better quality than those of the same variety on the standard. Every tree of this variety is doing well.

Beurré Diel.—Another of the best varieties for the quince, equal in almost every respect to the preceding. Trees all growing finely. A few specimens produced this year.

White Doyenné.—This old favorite is one of the best, where the fruit does not crack; though, unfortunately, it is getting to be very uncertain in that respect even in the favored "valley of the Genesee." It makes a very symmetrical pyramid with about as little care as any other variety. Trees of this all doing well.

Pratt seems to be well suited to the quince. Trees growing vigorously, and forming handsome heads.

Jalousie de Fontenay.—Of three trees planted, two are looking yellow and making little or no growth; one is doing well.

Church.—Doing remarkably well so far; making handsome and thrifty trees; none better.

Bartlett.—This universal favorite is rather uncertain on the quince, unless double-worked. Some trees will do as well as one could wish, growing and fruiting finely, while others with the same treatment can not be made to thrive. It is also very liable to be broken off at the junction of the pear with the quince stock. Of two planted in this orchard, both grew finely; one was blown off by the wind this season, the other is as thrifty as could be desired.

Beurré Gens.—Growing thriftily. Makes a beautiful pyramid.

Baron de Mello.—One of the most thrifty. Makes a handsome, symmetrical tree. Fruited this year.

Beurré de Waterloo.—Two trees planted; both died out the second and third season. Said by some to succeed on the quince.

Beurré Clairgeau.—Doing very well. Fruited this year.

Summer Franc Real.—This variety always does well. The trees are thrifty and form symmetrical heads.

Lawrence.—Two trees planted, and both of them doing as well as any on the ground. Said not to be reliable on the quince.

Beurré d'Anjou.—Two trees planted, both of which grew well. One of them was broken off this season; the other is very thrifty.

Osband's Summer.—Growing well. Makes a handsome tree.

Madeleine.—Growing well, but rather loosely. Requires close pruning to keep it in good shape.

Easter Beurré.—This is rather an irregular grower, sending out strong shoots at random, as it were, making it difficult to get a well-formed tree. It is a peculiarity of this kind to grow slowly for the first year or two, after which it is as vigorous as most varieties. Trees of this all doing well.

Woodstock.—One of the most thrifty. Makes a symmetrical pyramid. Fruited this year.

Stevens's Genesee.—Doing well.

Josephine de Malines.—Quite thrifty.

Vicar of Winkfield.—As usual, one of the most vigorous. This variety always grows and bears remarkably well on the quince. It is one of the best for market purposes.

Glout Morceau.—Another remarkably fine variety for dwarfing, making a most beautiful and vigorous pyramid, with very little care. Does not fruit well until the trees have attained considerable age.

Swan's Orange.—A very strong grower. Makes a fine pyramid.

Brandywine.—Growing exceedingly well. One of the best on quince.

Doyenné d'Eté.—Doing finely. Fruits early.

Beurré Giffard.—A loose, open grower. Requires close pruning to keep it in shape. Trees all doing well.

Rostiezer.—A very rampant, straggling grower. Requires close pruning to keep it filled up.

Doyenné d'Hiver d'Alençon.—Growing finely, and making a beautiful pyramid.

Beurré d'Hardenpont.—Growing well.

Comte de Lamy.—Quite thrifty.

Rousselet Stuttgart.—Very thrifty. Makes a beautiful tree.

Marie Louise.—A crooked, straggling grower, but doing well.

Brown Beurré has not grown well.

Golden Beurré of Bilboa.—Growing finely. Makes a handsome tree.

Seckel.—Doing very well. Makes a well-proportioned tree.

Oswego Beurré.—Flourishing finely. Seems to gain in vigor as the tree increases in age.

Beurré Goubalt.—A remarkably strong grower.

Cabot has not done well. Of two trees, one is dead, and the other making but a feeble growth.

Canandaigua.—Quite thrifty.

Hosen Shenck.—Doing well. Shoots long and slender.

Oneida.—Very thrifty. Forms a well-proportioned tree.

Ananas.—Very vigorous.

Kirtland.—Growing thriftily, and making a very handsome tree.

Beurré Capiaumont.—Remarkable for its thrifty and symmetrical growth.

Ananas d'Eté.—Doing only moderately well.

Des Nones.—Does not appear to succeed very well.

Bloodgood.—Growing well.

Bergamotte d' Esperine.—Flourishing finely, and making a good pyramid.

Beurré d'Aremberg.—Only moderately thrifty.

Beurré d'Amalis.—A vigorous, though rather crooked grower.

Howell.—One of the best growers. Makes a handsome tree.

Kingsessing.—Very thrifty indeed. Makes a fine pyramid.

Beurré Diller.—Doing moderately well.

Triomphe de Jodoigne.—A remarkably vigorous grower on quince.

Doyenné Sieulle.—Growing well, and forming a handsome tree.

Fondante de Malines.—Doing moderately well.

Parsonage.—Growing well.

Beurré Superfin.—Moderately thrifty.
Beurré Kossuth.—Not very vigorous.
Theodore Van Mons.—Very flourishing.
Van Mons' Leon le Clerc.—Growing very finely. One of the most symmetrical trees in the orchard.
Forelle.—Very thrifty.
English Jargonelle.—Not doing well.
Delices d'Hardenpont.—Succeeding very well indeed.
Passe Colmar.—One of the most vigorous.
Urbaniste.—Very thrifty. Forms a beautiful head.
Nouveau Poiteau.—Growing very rapidly. Makes a very symmetrical tree.
Pennsylvania.—Doing well.
Van Assache.—Growing moderately.
Bezi de Montigny.—Very thrifty.
Bergamotte Cadette.—Flourishing finely.
Pinneo.—Growing moderately well.
Bonne de Zees.—Quite thrifty.
Pius Ninth.—Very successful.
Zepherine Gregorie.—A very thrifty tree. Forms a fine pyramid.
Lodge.—Doing well.
St. Michael Archange.—Very fine.
Tyson.—Not succeeding well.
Long Green.—One of the most vigorous. Makes a handsome tree.
Soldat Laboreur.—Doing very well indeed.
Doyenné Goubalt.—A remarkably vigorous grower.
Buffum.—One of the most vigorous. Forms a handsome head.
Sterling.—Growing moderately.
Beurré Langlier.—Very thrifty indeed.

Among the varieties which have been thoroughly tested, and may always be relied upon for thrifty and productive trees, are Brandywine, Belle Lucrative, Beurré d'Amalis, Buffum, Beurré Langlier, Beurré Diel, Duchesse d'Angoulême, Doyenné Sieulle, Easter Beurré, Glout Morceau, Louise Bonne de Jersey, Nouveau Poiteau, Pound, Urbaniste, Vicar of Winkfield, and White Doyenné where it does not crack.

The following varieties are pretty generally known to be successful on the quince, but perhaps it will do no harm to mention them again. Some of them will occasionally flourish finely, but they can not be relied upon for permanent trees. Beurré Bosc, Beurré Rance, Dix, Flemish Beauty, Gansel's Bergamot, Marie Louise, Paradise d'Automne, Sheldon, Winter Nelis.

C. M. HOOKER.

MR. EDITOR:—Will you give a novice some information how to construct something small and cheap on the south side of a dwelling, to be heated by some hot water apparatus, in which he can propagate grape-vines, &c., &c., in pots?

I should be greatly your debtor if you could spare the space to give me directions so plain that I (who live away back in the country, and never saw anything of the kind) could go to work and make one.

If this is asking too much, can you tell me where I can get the requisite knowledge?

Yours truly, A SUBSCRIBER.

Manlius, Ontario Co., N. Y.

[We find a great many in want of just such information as "A Subscriber" asks for. He will find in the February number, and also in the present one, something to the purpose; and in our next we hope he will find some plans just suited to his particular case.—ED.]

ED. HORTICULTURIST:—The past winter has been extremely variable in this locality; the greatest degree of cold indicated by the thermometer was two degrees below zero; notwithstanding vegetation has suffered very much. I am cultivating the New Rochelle, Dorchester, and our local variety of the blackberry, and find them all three entirely killed down to the ground. Such a thing has never occurred with me since cultivating them before. In future I will adopt the same system with them that I have pursued with the tenderer raspberries, such as Brincklé's Orange, Fastolf, &c.; that is, lay them down and cover with soil. Young grape-vines of the Delaware and Rebecca (two years planted) are injured a little in their extremities only; the same may be said of Cassady. Kilvington, Brincklé, Raabe, Lenoir, Bland, and some other sorts I find killed and dry down to earth line.

Mary Ann, To Kalon, Canby's August, York Madeira, Garrigues, Concord, Hartford Prolific, Ohio, Diana, &c., are entirely uninjured, with their buds green and fresh to their extremities

Red Lion, Del. Yours truly, JOHN DIEHL.

[Information like the above possesses a peculiar interest in reference to the hardiness of particular kinds of fruits in different localities, and we should be glad to have more of it. We can by and by make up an interesting chapter of comments from it.—ED.]

ED. HORTICULTURIST:—While writing I may as well add a few words that I have wanted for long to send you in regard to shipping perishable fruits to a distance. A year or more ago, the HORTICULTURIST contained a wood cut of a "fruit protector," a patented article, designed to guard soft fruits against the jarring of railroad transportation. The chest containing the fruit was suspended by India-rubber straps. Last summer I used a much simpler and more effectual contrivance for the transportation of strawberries from this place to Chicago, 474 miles by railroad. The result was entirely satisfactory, the fruit arriving in perfect condition; time thirty hours. The fruit was picked very carefully into pint tin cups, the depth of which was equal to the diameter. These cups were placed, not on the bottom of the chest, but on a false bottom, which played freely in the chest, and rested on four or six spiral wire springs, such as are used for making spring mattresses, and costing a dollar per dozen. The number of springs was varied according to the weight of fruit packed in. The chests were made of such dimensions as to receive just so many cups each way, so as to allow barely a free play, with no extra room for jostling: on the top of the first tier of cups, narrow and thin strips of wood were laid, and another tier piled thereon, so in succession for four or five tiers. On top of the whole rests a vessel or box for holding ice, four inches deep, and of the same length and width as the false bottom. This is made of wood, except the bottom, which is of common stove-pipe iron, nailed to the wood and secured against leaking by white lead. In the top is a hole for introducing the ice, with a close-fitting cover. This box, with its charge of ice, rests on the topmost tier of cups, and rides with them on the springs. A lid, with hasp and padlock, shuts down over the whole. To prevent rude handling, stout trunk handles are placed on the ends of the chest. A better arrangement than this could not be desired. The whole load danced to every touch, and the fruit was relieved from all jolting. No air-holes were found necessary; but appeared rather to be injurious on trial. If the cups would bear covering with a tin cap, like a mustard box, or a blacking box, it would better guard against any accidental overturning of the chest. Mr. Peabody says the fruit will speedily spoil, if thus confined. With ice I do not believe it will; but this remains to be tried. The liability to loss by careless handling, tilting, and upsetting the chests was the only difficulty experienced.

Jackson, Tenn. Yours truly, CHARLES S. DOD.

[We should think the above arrangement would insure the safe carriage of fruits for a long distance, and commend it to the attention of our readers. But are tin cups the best that can be used?—ED.]

MR. EDITOR:—Having seen a communication in your valuable journal for March, from Mr. Bizzell, respecting a new mode of pruning the Grape-vine, I beg leave to state that I have pursued the same system with success on Grape-vines under glass, with the exception of leaving but two clusters on a shoot. I also practise a modification of it by sometimes cutting back the shoots to four eyes, when they have failed to produce fruit in the first instance, and I seldom fail to get one bunch from some of them, in which case I rub off the remainder.

The Vines are grown on the double-spur system, by which means the wood for bearing during the ensuing season is carefully laid in, and pinched at the proper time.

It will thus be seen that there is no danger of injuring the vine; in fact, it has a tendency to strengthen next year's bearing wood. It can also be practised on the long rod system, when unproductive, as the buds are generally double, when both may be allowed to grow, and, if neither show fruit, one can be operated on as above. I have never observed the vines to bleed to any excess from this pruning, nor is there any such danger after the leaves are fully developed, which is the proper time to cut back the shoots. It may naturally be inferred that the fruit produced by cutting back must ripen considerably later than that first set; but with some kinds, such as Muscat Alexandria, when in a cold house, this will be found an advantage, as at that period the weather will be warm, and, in consequence, the fruit better set. The bunches will not be as large as those first set, but there will be no difference in the size of the berries. Yours, respectfully, JOHN EGAN.

New Brighton, S. I., April, 1860.

[We are glad to learn that this system of pruning has already been applied to grapes under glass, the only place, we suspect, where it can be of any use to us at the North. It would seem, from Mr. Egan's statement, that the process is not especially injurious to the vine; and as it helps to prolong the grape season, it will doubtless prove to be of advantage, when applied to the Grapery.—ED.]

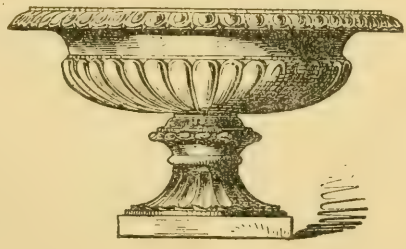
Editor's Drawer.

CITY LIFE COMPARED TO THAT IN THE COUNTRY.—Edward Everett lately delivered an Address before the New York State Agricultural Society, at Buffalo, from which we make the following too true extract. It deserves to be carefully read and preserved:

"In acknowledging, as I do most cheerfully, the important relations of city life and commercial pursuits to the entire social system of the country, I leave of course out of the account—I have no words but of abhorrence—for the organized conspiracies, swindling, and plundering which exist side by side with the legitimate transactions of the stock exchange. It is not one of the least perplexing anomalies of modern life and manners, that while avowed and thus far honest gambling (if I may connect those words) is driven by public opinion and the law, to seclude itself from observation within carefully tyled doors, there to fool away its hundreds, perhaps its thousands, in secret—discredited, infamous—blasted by the anathemas of deserted, heart-broken wives and beggared children—subject at all times to the fell swoop of the police—the licensed gambling of the broker's board is carried on in the face of day; its pretended sales of what it does not own, its pretended purchases of what it does not expect to pay for, are chronicled in the public prints to the extent of millions in the course of a season, for the cruel and dishonest purpose of frightening innocent third parties into the ruinous sacrifice of *bona fide* property, and thus making a guilty profit out of the public distress and the ruin of thousands.

"I do not claim for agricultural life in modern times the Arcadian simplicity of the heroic ages; but it is capable, with the aid of popular education and the facilities of inter-communication,

of being made a pursuit more favorable than city life to that average degree of virtue and happiness to which we may reasonably aspire in the present imperfect state of being. For the same reason that our intellectual and moral faculties are urged to the highest point of culture by the intense competition of the large towns, the contagion of vice and crime produces in a crowded population a depravity of character, from which the more thinly inhabited country, though far enough from being immaculate, is comparatively free. Accordingly, we find that the tenure on which the land is owned and tilled—that is, the average condition of the agricultural masses—decides the character of a people. It is true that the compact organization, the control of capital, the concentrated popular talent, the vigorous press, the agitable temperament of the large towns, give them an influence out of proportion to numbers; but this is far less the case in the United States than in most foreign countries, where the land is held in large masses by a few powerful landholders. Divided as it is in this country into small or moderate-sized farms, owned, for the most part, and tilled by a class of fairly-educated, independent, and intelligent proprietors, the direct influence of large towns on the entire population is far less considerable than in Europe. Paris can at all times make a revolution in France; but not even your imperial metropolis could make a revolution in the United States. What the public character loses in concentration and energy by this want of metropolitan centralization, is more than gained, by the country, in the virtuous mediocrity, the decent frugality, the healthfulness, the social tranquillity, of private life. I trust I do full justice to the elegant refinements, the liberal institutions, the noble charities, the creative, industrious, the world-encompassing energy, of the cities; but the profuse expenditure of the prosperous, the unfathomed wretchedness of the destitute, the heaven-defying profligacy of the corrupt, the insane spirit of speculation, the frantic haste to become rich, the heartless dissipations of fashionable life, the growing ferocity and recklessness of a portion of the public press, the prevailing worldliness of the large towns, make me tremble for the future. It appears to me that our great dependence, under Providence, must be more and more on the healthy tone of the population scattered over the country, strangers to the excitements, the temptations, the revulsions of trade, and placed in that happy middle condition of human fortune, which is equidistant from the giddy heights of affluence, power, and fame, and the pinching straits of poverty, and as such most favorable to human virtue and happiness."





TOWNSEND OR SEAGER APPLE.

for THE HORTICULTURIST,

Published by C. M. SAXTON, New-York.

Orchard Houses.



RCHARD HOUSES, in certain quarters, constitute a subject which is now attracting no small measure of attention. We can not perceive the same necessity for them here which may be supposed to exist in some other countries, nor do we believe that they will ever become leading objects in horticulture, except among amateurs. One of the chief arguments urged in favor of this mode of growing fruit-trees, especially the plum, the peach, and the nectarine, is the immunity thus afforded against the attacks of the curculio. This argument, to a certain extent, is a sound one, and with many will be sufficient to outweigh all considerations of labor and expense; and that the ends of science may be furthered, it is well that it should be so. It is certain to our apprehension, however, that the "little Turk" will not be so easily turned off. Neither glass, nor bars, nor wire netting will be effectual in keeping him out so long as there is a door to be opened; and once he has effected a lodgment within, he will be sure to make his appearance just at the inopportune moment he is least wanted, whether it be in January or March. This may not take place in an orchard house for several years; but that it will take place, we have not the least doubt. All analogy is in favor of it; and thus, in our plans for an orchard house, we must not forget to make provision for the companionship of this little pest.

Our position is, that as orchard houses become established, the curculio will take up its quarters in them, in greatly lessened numbers to be sure, and under easy control, but still there. Those who go into orchard-house culture must not suppose that they will thereby escape the annoyance of insects. There will be fewer of them, and they will be more readily destroyed; and this will be a great point gained. We wish to do away the impression which we know to have been produced upon the minds of many, that by growing fruit-trees under glass, in pots, they will escape all the annoyances of insects, and half the labor incidental to growing trees in the open air. We could scarcely have believed this, if the fact had not come under our personal observation. We desire to see orchard houses fairly started, and without false impressions so far as we can correct them; and we therefore say to those who purpose embarking in this interesting experiment, that looking after insects, pruning, watering, and other matters necessary to the greatest success in growing fruit-trees in pots, will require no inconsiderable labor and expense.

Opinion seems to be divided in regard to the best mode of constructing orchard houses for our hot climate, and also as to whether it is better to

keep the pots under glass all summer, or to remove them to the open air soon after the fruit is well formed. With our warm climate and clear sun, there would seem to be no necessity at all for growing plums, &c., under glass, except as a matter of amusement for the wealthy; but here we are confronted with the "little Turk" again, who is always an unseemly intruder whenever the subject is mentioned; but we have some doubts lurking in our mind, whether, if we perseveringly bestowed upon trees in the open air the same amount of labor which will be necessary to insure success in the orchard house, we could not secure at least two-thirds of the plum crop of the entire Union. We do not see any reason to hope, however, for any such persevering application of labor, and we therefore return to the orchard house.

So far as the construction is concerned, we are of opinion that it should be on the continuous roof principle, and as flat as is consistent with strength. Provision should be made for an abundant supply of moisture by evaporation, in such manner as to be easily controlled. We need scarcely say anything about providing for ventilation; for of this, in our opinion, there is generally a good deal too much. There will always be plenty of that, if nothing else. If the trees are to remain under glass all summer, (and what is the use of a special orchard house if they are not?) we would call attention to the plan recommended by Mr. Saunders, of placing them in a border divided by brick-work into compartments of the size of large pots. This plan affords sufficient facilities for root pruning, and greatly lessens the labor of watering. We have grown grapes in this way in a very satisfactory manner, and can not perceive why pears and plums could not be grown so too. The only doubt in our mind is, whether these trees will bear the same amount of heat that is congenial to the grape, provided a sufficient amount of moisture is supplied to the atmosphere. If these fruits will not bear the heat, it will be necessary to shade the glass; and then the question arises, whether they will mature kindly and in perfection without the direct rays of the sun. All these points must finally be settled by experience.

If, however, the trees are not to remain under glass during the summer, there can be no necessity for building a special orchard house, unless under some peculiar circumstances; for they can just as well be started in February or March in an ordinary greenhouse or grapery, and removed to the open air about the last of June. In this mode of growing fruit-trees in pots, we have had some experience; and as information on this subject, however meagre, is now eagerly sought, we will state concisely how we grew them. The first dwarf apples and pears we ever grew, we grew in pots, not from choice, but necessity; and all the happy hours we have since enjoyed among our plants and trees have not been sufficient to obscure the pleasure we took in growing those miniatures in pots. Our success was limited at first, in consequence of beginning with large trees: a cause which, we suspect, will produce many failures in orchard-house culture. We finally selected maiden trees, put them into the smallest pots in which we could conveniently get them, and cut them down to about six buds. If the leader grew too vigorously, we pinched it out when some twelve or fifteen inches long, and the laterals we pinched frequently and unsparingly to induce the setting of fruit-spurs: an operation which required close watching and a nice judgment, to prevent the spurs from running into wood.

Watering was carefully attended to, and the trees frequently syringed overhead. To prevent undue evaporation, the sides of the pots were protected by boards or hay, which we found to be especially serviceable. This treatment was continued till fall, at which time the supply of water was gradually lessened, but the leaves never allowed to flag. When the frost had stripped off the leaves, and the wood was thoroughly ripened, the leader was cut in to eight buds, and the laterals to four. The trees were then shifted into larger pots, and placed in the cellar for the winter. They were examined occasionally, and water given when needed, which was not often.

The first season the plants were grown entirely in the open air, but the next they were placed in the greenhouse during February and March. The same system of pinching was pursued during the second and subsequent years. In potting in the fall of the second year, some of the old earth was shaken from the sides of the ball, and portions of the old roots pruned off; and the trees at no time were put in pots measuring over fourteen inches in diameter. In the second year we generally had two or three fine specimens on each tree. When the fruit was well formed, the pots were put outside, and protected as before described.

In re-potting after the second year, the sides, top, and bottom of the ball of earth were pared away, and a portion of the old roots removed. Liquid manure was occasionally applied, and at long intervals lime-water. The trees were not allowed to overbear, ripening too much fruit having proved even more injurious to trees in pots than to those in the open ground; but a uniform crop was easily obtained every year. The trees were examined daily for insects during the early part of the season; the surface soil was frequently stirred with a blunted stick; and the outside of the pots was kept clean by being occasionally washed, for we had an idea at the time that a clean pot was conducive to the health of the tree, and we have seen no reason to abandon it since. Such, in few words, constituted our treatment of the pear; that of the apple and nectarine was, of course, somewhat different.

The reader will probably be glad to know of what our compost consisted. Two things we considered indispensable, and still consider so, namely, charcoal dust and black vegetable mould from the woods. We used to have a heap of rotted sod, a heap of fine old manure protected from the weather, some bone dust, charcoal dust, mould, lime, ashes, &c.; and we do not like to be without them now. The basis of the compost was decayed sod, this, however, being light; to this we added one part of vegetable mould, one part of fine manure, one part of charcoal dust, and a sprinkling of bone dust and ashes. The drainage consisted of about one inch of charcoal, the size of hickory nuts, which we consider the best drainage that can be used. The ingredients of the compost were thoroughly mixed, and frequently turned before being used. With such a compost and the treatment above described, very fine pears, plums, nectarines, &c., can be grown in pots by anybody who has a greenhouse or grapery and a good cellar, or even the latter alone. Such trees, in pots, are beautiful objects placed on the side of walks or on the lawn; and the pleasure of growing them will be a rich compensation for the labor and time bestowed. If any of our readers desire further information in regard to this manner of growing fruit-trees in pots, we shall be happy to give it.

THE PANSY.

BY DANIEL BARKER, SPRINGFIELD, MASS.

The natural order *Violaceæ* comprises a very beautiful genus of small but very pretty and desirable plants, embracing not only the well-known winter-flowering Neapolitan and Russian Violets, but those great favorites of every lover of spring-flowering plants, the *Pansy*, which is a flower universally admired, and perhaps without a rival in the extent to which it is grown. We have found it in the garden of the mansion and the cottage throughout the Eastern and Middle States, and have sent them to every State of the Union. Twenty-five years since it was a mere weed compared to the highly improved and highly prized varieties of the present day. The advance that has been made in it has been such as to induce thousands of ladies and gardeners to procure and grow it. But there are many who complain that they can not grow Pansies ; to help these is now my object ; and if the few remarks which I have to offer may tend to promote the culture of this beautiful plant, I shall be highly gratified.

April, May, and June are the months when the Pansy is in perfection ; the object of the cultivator must therefore be to have his plants in good, healthy condition for flowering at that period. Cuttings may be taken from the middle of August to the end of September, or later ; for this purpose select the side-shoots, as they almost invariably make the best plants, and root much sooner than the flowering shoots, which are not unfrequently hollow and quite unfit for making good plants. Never use any kind of glass for covering over the cuttings, but put them in the open border, shading them from the sun and watering them freely during dry weather, until they are sufficiently rooted. The surface-soil should be frequently stirred, and no weeds be allowed to grow among them.

Soon as well rooted, commence to pot them in two- or three-inch pots, according to the quantity of roots, using a compost of good loam, leaf-mould, and very rotten manure, with a portion of good, sharp river-sand, and an inch of broken bones, or small pieces of charcoal, at the bottom of the pots for drainage. After they are potted, place them in a cold frame, shading them during the warmest part of the day until sufficiently established, which will be in about ten days. In this situation they may remain during the winter, giving them as much air as possible during fine weather, and protecting them from severe frosts by banking up round the frames, and covering the sash with mats or straw.

About the first week in March repot some of the strongest and best varieties into six-inch pots, using the same kind of compost as before, with plenty of drainage at the bottom of the pots. In repotting it will be well to remove some of the soil from the ball, but care is necessary to avoid any injury to the delicate fibres When potted, place them again in the frame, raising them to within six inches of the glass. Admit air as previously, and to make good-shaped plants the pots should be turned round frequently, and the soil stirred upon the surface ; by this means the plants become stiff and well formed.

To secure a succession of bloom through the summer months, plants should be planted out in a shady border about the first week in May and the last of June, in a compost the same as recommended for potting.

In planting, place the plants not nearer each other than eighteen inches, and never allow them to become too bushy, or the flowers will deteriorate in size. Liquid manure may be liberally given them, keeping the plants about three main stems. During heavy storms the flowers will require protecting, which can be done by placing a roll of canvas over the bed, which should be fixed in such a manner as to roof up and down at an angle of 45 degrees, which will not only protect them from storms, but likewise from the fierce rays of the sun. Injury from this cause not unfrequently disappoints the hopes of those who cultivate the Pansy, more particularly when they are cultivated in the open border.

I would strongly urge the advantage of growing this beautiful plant in pots, which will render the grower independent of the weather, as well as of unnatural soil, &c.

[It will be perceived that Mr. Barker's plan of growing the Pansy differs from that of Mr. Fry, published last month. The latter prefers to resort to seed each year ; and when the seed is carefully saved from choice kinds, a fair proportion of good varieties may be looked for. Mr. Barker, however, prefers to make sure of his choice kinds by propagating them from cuttings, the only way in which the object can be certainly secured. The amateur can try both methods, but he must be careful to secure good seed, or he will be doomed to disappointment. With his article Mr. Barker sent us some specimens of his Pansies, and they were certainly fine.—Ed.]

DESIGN FOR A SMALL VILLA.

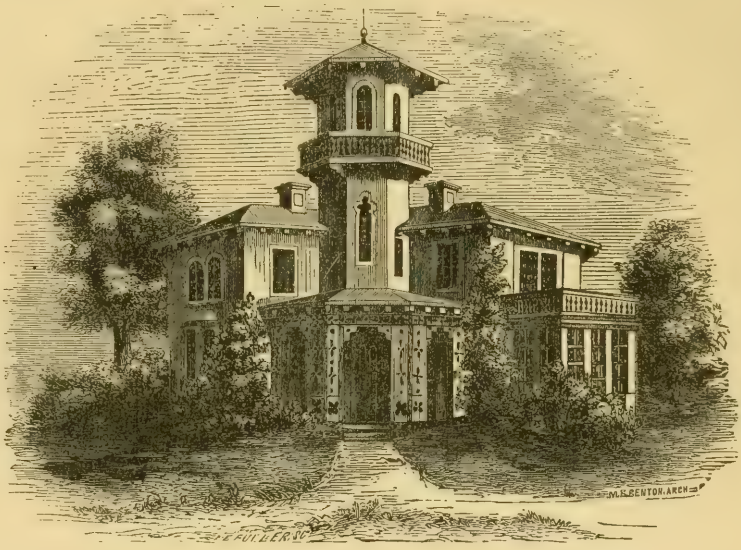
BY MYRON B. BENTON, AMENIA, N. Y.

This design is calculated to embrace some of the elegancies that are supposed to belong more appropriately to the villa, in a smaller edifice than usually obtains that name, but at the same time it is attempted to render the interior accommodations convenient. Though a conservatory and verandas are included in the design, the inconvenience and unpleasantness of a dining-room and kitchen in the cellar are avoided.

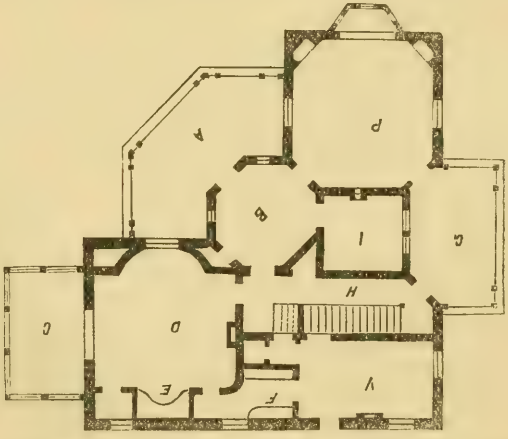
The principal entrance to the house is from a veranda, through an octagonal hall, which occupies the lower part of the tower. From this open the parlor, library, a cloak-closet, and the side wall. The latter contains the stairway, and opens at the opposite end upon a smaller and more retired veranda. This veranda should overlook the flower-garden, or some other pleasant feature of the grounds. It communicates with the parlor by a door, and with the library by the windows, which open to the floor. The parlor should be connected with the bay-window by an arch. Were the ceiling of the bay-window of the same height, and if the cornice of the room were to extend around both, unbroken by any such division, it would be apt to give an apartment of this form an appearance of irregularity in shape ; though this plan is often adopted with good effect in rooms of the ordinary rectangular form. A case of shelves for a cabinet might be fitted at each side of the bay in the niches.

The dining-room opens from the side hall, and connects with the conservatory and veranda by windows opening down to the floor. A recess is

made for the sideboard. Upon one side of it is a china closet, and upon the other a door communicating with the pantry. This place for a door connecting the pantry with the dining-room is deemed preferable. Should it



open more directly into it, at one side of the fire-place, a full view would thus be given, whenever the door was opened, not only of the whole pantry, but through that of the kitchen. This inconvenience is too often overlooked

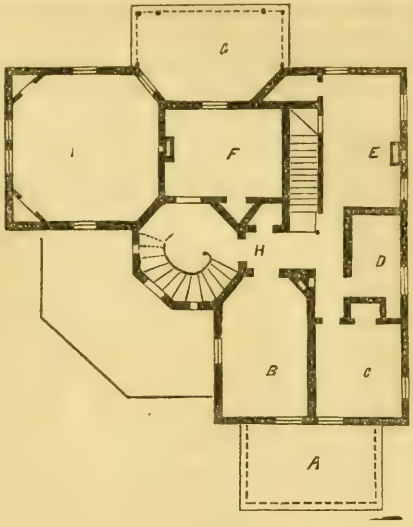


by builders. A house should be so arranged that these views would be cut

off. I have in mind more than one house, in which one may stand—especially in the summer, when doors are not kept carefully closed—at the front doorway, and see, through hall, parlor, and dining-room, what is transpiring in the back kitchen.

The chamber accommodations include six bed-rooms, with convenient closets—two of them open upon the balcony over the conservatory, and two others connect with the covered balcony, or upper veranda. From the bed-room over the kitchen the attic stairway opens, and a flight of winding stairs in the tower leads up to the observatory.

The cost of constructing such a house, with plain finish, would probably be about $3,000.



THE NEGLEY PEAR.

BY WILLIAM HEAVER, CINCINNATI.

In your May number the frontispiece is an engraving of the above-named fruit, and accompanied with a historical tradition of its history and origin, so far as known to the writer, all of which is interesting matter, and which your correspondent would very willingly let pass, did he not honestly believe that the high eulogium on, and the glowing description of, the above-named fruit were likely to mislead and disappoint many of the readers of the *Horticulturist* who are accustomed to rely on your journal as *first-rate authority* in *Pomological matters.*

As a member of the Fruit Committee of the Cincinnati Horticultural Society, having had an opportunity of examining and testing the merits of the above-named variety last fall, I will, as near as I can, give you the character of the fruit as it appeared to us, (with a desire nothing to extenuate nor to set down aught in malice.) The specimens were sent by Mr. Negley expressly for the inspection and examination of the Fruit Committee at the fall exhibition of our Horticultural Society, accompanied with a laudatory communication from Mr. N. Of course, inferior specimens would not be selected for such an occasion ; and as we had at the time over one hundred varieties of *Pears* on exhibition, we had a fair opportunity of judging the merits of the *Negley Pear* by comparison. The opinion of the Committee was, that it scarcely deserved to be classed as second quality.

In appearance it so nearly resembles the Cumberland, that the impression of the Committee was, that it is identical with that variety, although in quality the specimens sent were not equal to some of the Cumberland tested with them ; this, however, might result from the same cause as affected

those sent to Mr. Chas. Downing ; but whatever the cause, the fact is proved, that travelling *East* or *West* it does not sustain the high character for quality claimed for it by our Pittsburg pomological friend.

That the late Mr. Ernst should have mistaken some specimens for the Flemish Beauty would be somewhat surprising, did not the writer ingenuously admit that his testing it dispelled the illusion. If any of your readers may imagine that the *Negley Pear*, from the writer's connection of the names, bears in quality any similarity to the *Flemish Beauty*, they will find themselves most egregiously disappointed. It is certainly desirable that new varieties of fruits should have their *good* qualities well ascertained before such extensive prominence is given to them as is accorded the Negley Pear in the last number of the *Horticulturist.*

The Peabody Strawberry is a strong instance of the necessity of caution and discrimination in recommending new varieties of fruits for general cultivation. The writer is not by any means opposed to the introduction of new varieties, but disposed to encourage the desire to raise new varieties from seed ; and had he not had the opportunity of judging the merits of the variety under consideration, reading the article would have prompted him to possess it the coming season ; but as the case stands, will be content to remain without it, already possessing the Cumberland, of which he will be happy to furnish the editor specimens next fall, for comparison with the Negley, should Mr. N. and the editor desire it.

[We give place to Mr. Heaver's strictures on the Negley Pear, and regret, of course, that there should be any necessity for them. We trust that others, who have had opportunities of testing the quality of the Pear, will give us their opinion fairly. We do not imagine that Mr. Negley has stated more than he honestly believes. We have no personal knowledge of the Pear, and can therefore give no opinion of its merits. The engraving was prepared by our predecessor, and we took it for granted that he had fully satisfied himself of the good qualities of the Pear. Specimens were sent to him, and we hope he will tell us what he thought of them. Mr. Heaver may send us the Cumberland, and we have no doubt that Mr. Negley will send us his seedling, and we shall then be able to tell our readers what, in our opinion, the Negley really is.—Ed.]

GISHURST'S COMPOUND.

BY W., WASHINGTON HEIGHTS, N. Y.

An allusion to the above-named article, by yourself, or one of your contributors, in the April number of your Magazine, has induced me to solicit a small space in one of your next issues, to add my mite of testimony to its merits.

For some time past I have observed in the *Gardener's Chronicle* and other English gardening periodicals, numerous and various attestations of its potency in annihilating the numberless entomological pests with which gardeners have to contend ; consequently, as soon as I discovered that it was in the market here, I purchased a box of it of Mr. Alfred Bridgeman, and took it home to experiment with.

After reading the directions, which accompany the box, I concluded I

would commence, as it is said the majority of the most successful business men who have reached the top round of the ladder have commenced, viz., by beginning the ascent at the bottom round first.

Acting on this principle, I took the smallest quantity recommended, viz., 2 oz. to 1 gallon of water, or, which is the same thing, I weighed 3 oz. of the compound, and put it into a pail with 6 quarts of SOFT water : after remaining there for 6 or 8 hours, it was thoroughly dissolved and fit for use.

I then looked around for a favorable, or, rather, an unfavorable subject to experiment upon. I soon found a Bourbon Queen rose, with the lower leaves thickly peppered with red spider, and the young growth at the top as thickly covered with mildew and green fly. I must admit that this is not a very creditable confession for a gardener to make, but assuredly this was the precise condition in which I found her majesty the Queen of the Bourbons, whom I politely escorted and introduced to the new element, "Gishurst's Compound," and then and there gave her a good sousing over head and shoulders for ten or fifteen seconds. Rather rough usage for a Queen, I admit, but more humane than decapitation, after all. I replaced her on her throne; and the next day, in medico-professional style, paid my patient a visit, when I found her as free from her enemies as were the Israelites of old after crossing the Red Sea.

The green fly was perfectly black, the mildew had disappeared, and the spider, if not quite defunct, was in a perfect state of quiescence. I may as well remark here, however, that in about a week the spider made his appearance again; for that reason I would suggest that it would be advisable to make the solution a little stronger for that gentleman, say 3 oz. to the gallon; but for the green fly and mildew, 2 oz. are sufficient, as I have repeatedly tried it on Roses, Pelargoniums, etc. As regards mealy bug and scale, I can not speak experimentally, as, fortunately, I have very few to experiment upon, but these I am satisfied it will destroy by applying from 6 to 8 oz. per gallon of water.

This compound will be found an excellent substitute for sulphur in vineries: instead of scattering sulphur broadcast over floor, leaves, pipes, and flues, (which is very unsightly,) take 2 gallons of this mixture, if mildew appears, and just draw the syringe over the affected foliage, and there will be an end of it. If it appear again, in a week or two, "repeat the dose," as the disciples of Galen say.

And now, Mr. Editor, what think you of some of our pomological enthusiasts investing five dollars in this article to give it a fair trial on that merciless rascal, the plum curculio? My impression is, that two good applications of it, at the right time, would, as Mr. Toodles says, "squelch him."

In this city and Brooklyn conservatories attached to the dwelling are becoming very numerous, and the gardeners, I know, often have trouble in obtaining permission of the ladies of the mansion to "smoke the greenhouse," in consequence of the disagreeable smell which pervades the whole house whenever this operation has to be performed; and frequently, when it is considered necessary to smoke, especially in the early part of the winter, there are, in fact, but few plants that require it, and yet the whole house must be filled with smoke to get rid of them.

When this is the case, dissolve 4 oz. of the compound in 2 gallons of water, and dip the plants in it, as I described in my No. 1 trial; and by fol-

lowing this up, this tobacco smoke nuisance may be at least partially dispensed with.

The liquid, I find, will keep good and fresh for three or four weeks.

[We are obliged to W. for this lively description of his experiments with Gishurst's Compound. There is no person more competent to make such experiments, and none whose testimony may be more implicitly relied upon. We have no doubt the "Queen" will ever hereafter consider him a most faithful and loving subject for having so summarily disposed of her enemies. The suggestion in regard to the "little Turk" is a good one. He has no business here, and ought to be driven from this continent at least. Who will go a "V" on the "Turk?" In the mean time, W., let us hear from you again.—Ed.]

BARTRAM PEAR.

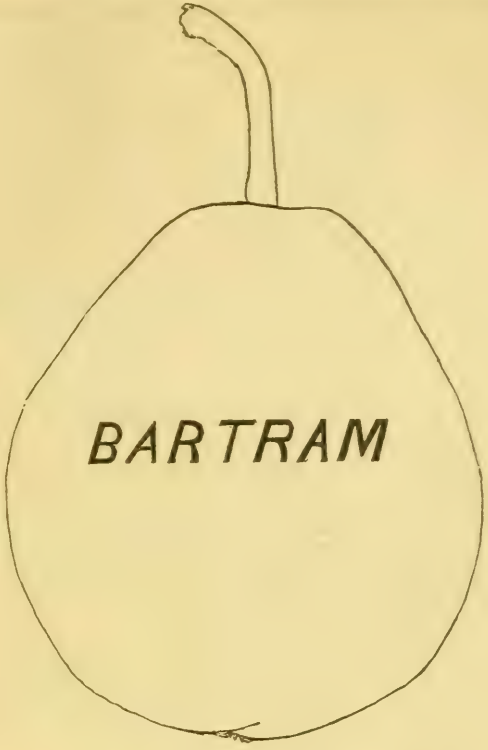
BY W. D. BRINCKLÉ, M. D., OF GROVEVILLE, N. J.

Specimens of this desirable Pear were received by me from Mr. Harmer on the 21st of September, 1859. A dish of them was exhibited at the same time by Mr. Harmer, at the Annual Exhibition of the Pennsylvania Horticultural Society.

Size of Fruit, rather large, two inches and thirteen-sixteenths of an inch long, by two and five-eighths wide ; *Form*, obovate ; *Skin*, green, becoming yellow, with numerous russet dots and occasionally markings of russet on the side ; *Stem*, one inch and an eighth long, by three-sixteenths thick, inserted in a rather flat surface with little or no depression ; *Basin*, shallow, slightly plaited ; *Calyx*, medium, segments nearly erect ; *Core*, medium ; *Seed*, rather small, dark brown, with an angle at the inner side of the blunt end; *Flesh*, greenish-yellow, fine texture, buttery; *Flavor*, saccharine, with a delicate aroma ; *Quality*, "very good ;" *Maturity*, the specimens sent to me were eaten on the 22d of September, but it is said to begin to ripen the last of August ; *Wood*, olive-brown ; *Leaf*, of ordinary size, glossy, folded, accuminate, with crenate serratures ; *Growth*, rather straggling.

The Bartram is an accidental seedling that originated near the old Bartram Garden, on the premises of the late Miss Ann Bartram, grand-daughter of the elder Bartram. She resided on the road leading from the railway bridge over the Schuylkill at Grey's Ferry to the Darby Road, being now embraced within the incorporated limits of the city of Philadelphia.

My attention was first directed to this variety in 1853, by the veteran pomologist, Col. Robert Carr. He described it to me as a very fine variety, larger than the Petre, and eminently worthy of being propagated. I therefore called on Miss Bartram to see the fruit ; but it was ripe and gone. I obtained its history, however, from the kind old lady, (who was then living.) She informed me that it originated on a part of her grounds remote from her dwelling. When it came into bearing, she was so much pleased with the size and quality of the fruit, that she determined to transplant the tree to a more suitable and convenient locality. The removal was accomplished, but proved fatal to the original tree. Four small suckers, however, which had sprung up from the root, survived, and were planted in the corners of a quadrangle near the mansion house. These suckers commenced fruiting in 1850.



The neighborhood of this valuable Pear is renowned as having been the birth-place of the far-famed Seckel, the Petre, Kingsessing, Jones, and Lodge ; the original trees of all but the last of these varieties are still standing in their respective native localities.

[We are obliged to Dr. Brincklé for his interesting contribution. His descriptions are always concise and intelligible. We should be glad to have Mr. Harmer send us specimens of the fruit next fall.—Ed.]

ABOUT THE DANDELION.

BY J. STAUFFER, LANCASTER, PA.

This very common plant, that adorns our grass plats and pasture grounds, with its bright, golden-colored flowers, from the first opening of spring until late in September, grows spontaneously in the four quarters of the globe; from near the poles to beneath the equator ; on the margin of rivers and streams, as well as on sterile rocks ; has various qualities that are seldom met together in any description, if ever heretofore combined in one.

I shall not stop to describe this very common and well-known plant.

Dr. Gray, in his late Manual of Botany, reverses the old name, "Leontodon taraxacum," no doubt for sufficient reason, to that of *Taraxacum dens-leonis.*

Our common English name, "Dandelion," is a corruption from the French name, "Dent-de-lion," which, like the German name, "Löwenzahn," and the old Greek name, "Leontodon," has its allusion, from the runcinately-toothed leaves, to the tooth or teeth of a lion. Our other common name of "Piss-abed" is also after the French name "Le piss-enlit," derived from its diuretic qualities. The other German names of "Pfaffenröhrlein" and "Dotterbluhmen" are not so clear. Thus much as to its name. Next its properties.

Medicinally.—The pharmacopœias recognize only the root, as being by far the most efficacious part. It should not be employed till full grown, when the aqueous juices have become milky and bitter, in the months of July to September, and either used fresh or when carefully dried.

It yields its active qualities to water by boiling, and is used in the form of decoction, extract, or simple infusion. A crystallizable principle has been extracted from the juice of the root called *taraxacin.* It is bitter and somewhat acrid. The root is slightly tonic, diuretic, and aperient, and seems to have a specific action upon the liver, exciting it when languid to secretion, and resolving its chronic engorgements, and is a popular remedy with many practitioners in this country and in Germany particularly, in derangement of the hepatic apparatus, and of the digestive organs generally. Bitartrate of potassa added to the decoction improves its aperient effect, and aromatics correct a tendency to griping or flatulence. This is a brief statement of its leading *medical* qualities. Then as a

Culinary.—The tender leaves in spring, used in compound salads, are equal to those of Endive or Succory. The fusiform roots are eaten raw as salad by the French, and boiled by the Germans like salsify or scorzonera. Dried and ground into powder, they afford a substitute for coffee, in all respects equal to that of chiccory root. As a

Weed, it is difficult to extirpate, because every inch of root, according to Loudon, will form buds and fibres, and thus constitute a new plant; besides, myriads of seeds are annually wafted over the country by means of the pappus, making the plant more abundant than welcome to the farmer. As

Fodder, swine are fond of it, and goats will eat it, but sheep and cows dislike it, and by horses it is refused. By way of conclusion we will notice it as the

Rustic Oracle, as it is called in the "language of flowers." After blossoming, the inner involucre closes, the slender beak of the seeds elongates and raises up the pappus while the fruit is forming, the whole involucre becomes reflexed, displaying the pappus in a globular head around the central disk, forming what are termed "puff-balls." Who is there that has not delighted in youth to scatter these feathered seeds, by a puff of the breath, to see them carried off like miniature parachutes, and sailing over the greensward or meadow, thus wantonly perhaps aiding their distribution? A custom prevailed among rustic swains, when separated from the object of their love, to carefuly pluck one of those feathered spheres, charge each of the little feathers composing it with a tender thought, turn towards the abode of the loved one, blow, and the little aërial travellers were bidden faithfully to convey the secret message to his or her feet. Did they desire to know whether the dear one thought of them, they would blow again, and

if a single egret remained, it was a proof they were not forgotten. But enough of this. I will only add that the Dandelion attracted very early attention. Friend Howitt speaks of it as

> Dandelion, with globe of down,
> The schoolboy's clock in every town,
> Which the truant puffs amain,
> To conjure lost hours back again.

LANDSCAPE ENGINEERING AND GARDENING.

BY GEORGE E. WOODWARD, NEW YORK.

To one who has devoted any thought or attention to Landscape Gardening, the greatest inconsistencies must be apparent between its theory and practice, while it is universally admitted to be worthy of an important rank among the arts, and to require tastes of a high order of cultivation and refinement. Its every-day practitioners, if we may judge by the advertising columns of the newspaper, unite its duties with those of the coachman and the common gardener; both stating that, in connection with their trade or calling, they are prepared to lay out grounds, and do ornamental planting.

In every other department of art, we are unwilling to accept or admire any production from those of inferior taste or skill; not only do we employ the first order of talent, but insist on that of long-established reputation. In Landscape Gardening, this is reversed; and we are ready to admire the work of inferior minds, no matter how much it may lack the principles of beauty or taste.

Now there must be a woeful ignorance existing on what is true beauty or true artistic treatment in Landscape Gardening, or else a liberal disposition to spend money in doing and undoing, experimenting, changing, etc., to find out in the most costly and unsatisfactory manner what is pleasing to our tastes.

If we take the ground that the taste and talent which shall design and superintend our landscape improvements, shall be equal or superior to the taste that is to appreciate them, we shall have made an advance, which financially will be attended with very happy results, and equally as much so artistically; but if we allow ourselves to be persuaded and guided by minds that can draw no distinction between Gardening and Landscape Gardening, can see no difference between a trade and an art, the mechanical and artistical, the practical and the beautiful, we must not expect much else but disappointment. If we desire the love of country life to increase, and the refined and elegant enjoyments of it to be pursued, we should take the same plain, common-sense view of Landscape Gardening that we do of the arts; and either educate ourselves to execute and appreciate it, or look to the education, tastes, and practical abilities of those who make it a profession. In spite of much that has been written to the contrary, we are of the opinion that the principles and practice of Landscape Gardening are plainly within the reach of all who have any desire to acquire them, and they, with the kindred arts of Rural Architecture, and Landscape and Agri-

cultural Engineering, should be made a portion of a finished education. Downing says, that "Ignorance is not bliss, nor is it economy in improving a country place;" and sooner or later, experimental ruralists will find it too true. The expense of rural improvements among those who know, has almost become a proverb. A man with a "weak back" had better not undertake the high improvement of a country place, especially in the blind manner in which such improvements are generally executed. We see every day, in practical Landscape Gardening, the prosecution of work without a plan, a total want of knowledge of the result, and subject to the whims and notions of every presuming critic.

There are otherwise intelligent men, who can not comprehend the possibility of improving a country seat from a plan, who would ridicule the idea of measuring earth-work, or tracing a curve independent of its centre, form no conception of the beautiful aërial perspective effects of color in trees, and utterly incapable of studying an improvement in the abstract. With them, Landscape Gardening is, and always will be, an experiment, which, with constant alterations, never ceases to be an experiment, never fulfils their idea of what is beautiful, is never pleasing, but always suggestive of a heavy expenditure. Landscape Gardening may be properly defined as the application or results of most of the scientific professions; and to study Landscape Gardening without a knowledge of its elements, certainly would require one to have extraordinary natural abilities, and herein may lie the great difficulty in acquiring it. The professional expert brings to his aid, not only the resources of a finished general and mathematical education, but a thorough knowledge of surveying, civil engineering, architecture, drawing, painting, botany, chemistry, and all gardening operations; and these are essentially necessary for a rapid, intelligent, and economical execution of the art.

When an ordinary gardener undertakes Landscape Gardening, it becomes to him a riddle of the most intricate character; and with the impression that it is a part of his trade, he works out by guess-work and experiment a result that can only be successful by the merest chance. Landscape Gardening and common Gardening bear just this resemblance to each other, that Gardening is one essential element of Landscape Gardening, but by no means qualifies one to be successful in its pursuit, until there is added to it a thorough knowledge of the arts of design and construction, and an educated taste and ability.

It can be easily demonstrated, that much of the expense of landscape improvement is owing to the ignorance of those who undertake it. Experiments are costly undertakings, and an expensive manner of studying Landscape Gardening; but there are few persons who will admit that they can not build a house, lay out a country seat, or construct a common road, until they have tried.

[And Mr. W. might have added, "not even then." The above is the beginning of a series of articles on this subject, in regard to which a great many false notions are still prevalent.—Ed.]

A CHAPTER ON MULCHING.

BY W. R. COPPOCK, BUFFALO, N. Y.

Are we not a singular people, fond of extremes, novelty, and innovation? Let any subject strike the popular ear, and it is ridden, "Gilpin" like, without either rhyme or reason; when the fit is off, as suddenly abandoned. A case in point is, that some one suddenly has come to the conclusion that mulching trees is neither useful nor proper! Shade of the ever lamented Downing! tell it not! let it pass into oblivion still-born! Let not so truly valuable an adjunct to the tree-grower be slandered into bad odor thus thoughtlessly. No! no! for all time, on this subject, keep facts in view. Well, indeed, may the ignorant opposers of scientific manipulations eschew treatises when such evanescent flickerings are treated as cool reflections. Because, forsooth, some foolish persons choose to build a haystack around their trees, where bees do congregate, and hornets build their nests, does it follow that a more judicious application should merit the malific thrust thus given? The practice itself is American; the English, from whom we are prone to copy, need no such special mulch. Their climate is so universally moist, that a dry, clear day to them is an exception. With us, on the contrary, our summer months are generally hot and dry. The soil, unless constantly stirred, becomes baked and hard. The occasional showers run from the surface without penetrating any useful depth, and hence vegetation, especially trees recently planted, suffer greatly during that portion of the season when in truth moisture is most needed; the plant ripens prematurely, and early sheds its leaves. There *is* a variety of loam that is always moist, yet never wet, and does not bake or crack. But such soil is not as common as I wish it were, and hence the arboriculturist must exercise his skill in adapting his means to a desired end. But let me record my dissent to this vandalism, and give some reasons therefor. All observing, practical men must know full well that too rapid evaporation is the bane to be guarded against in removing plants of any kind; that shade, synonymous with mulch, is highly necessary in clear weather. For however carefully a tree may be taken up, the greater part of its feeders are destroyed. Thousands of minute fibres thread the soil, and in most instances at great distances and depth, which can not be removed with the plant. The tree thus deprived of its ten thousand suction tubes is placed in a new medium, and the losses it has sustained are attempted ofttimes to be replaced by artificial watering. Here again is an error. Practice fully proves that artificial watering at such times does not remedy the evil, but rather hastens the death of most plants by surfeit and decay at the roots. A pail or two of water, perhaps drawn from the well, and dashed around the plant, is far different from that fluid found in the soil, which has become chemically charged with the natural pabulum necessary to nourish a living tree. But mulch it, prevent excessive evaporation, preserve the tempered moisture of the soil, by the appliance of some light litter, such as straw, cut grass, chip dirt, etc.; and if you desire to make doubly sure, mulch the body of the tree also, if large, with hay, or straw bandings, or what not; and watch then the sure result. Instance street shade trees—young maples, elms, lindens, &c.—what rapid and splendid growths they frequently make—their roots, one-half buried under a close flagging,

while the balance are under a ten-inch pavement! Is the mulch here prejudicial? Some nine years since, I planted twenty-five ten-year-old cherry-trees; I well recollect being ridiculed for the attempt. No matter; I wanted cherries, and cherries I got. I superintended their lifting, yet with all my care they were sadly mutilated; fortunately, it was a rainy time. They were carried a mile, and planted in holes previously prepared. "*I know how to plant a tree.*" All were mulched, and each tree was wrapped with a hay rope from the collar to the main branches; and even there, as far as possible. All lived; nay, they grew, and although I paid a high price for them, they soon repaid me in fruit and pleasure many fold. Since then, I have transplanted two hundred cherry-trees five years old; seventy of them I mulched with *pea haulm*, and lost not one. The balance were not mulched, and I lost (or they are growing feebly) more than forty. They were all equally well planted in good loamy soil.

Last spring I decided to remove a dozen beautiful dwarf pears into my lawn. They were ten years old, and had borne well for years. The trees were carefully taken up, and as carefully planted. For a time all looked well; but soon, alas! feebleness was plainly visible; a portion of them shed their leaves entirely, and the knowing ones said they were "gone." Not so, however. I mulched the surface of the ground for a circumference of eight feet, and then I mulched the trees. They were ten feet high. Stakes twelve feet long were placed around each tree; the branches were drawn together, and tied with listing, and then a cotton sheet was wound around the whole. Night and morning, with a syringe, the branches were moistened; no water to the roots. In three or four weeks the buds began to swell, and at midsummer they were in full foliage again. The sheet was gradually removed, and during a rainy time entirely so. Some of them made several inches of new wood, while others set some fruit, which, as a matter of course, was taken off. Of the twelve, eleven have entirely recovered. The twelfth, during severe gales, had the sheet badly torn, and so left. It is feeble, and may not recover.

Some years since I made an experiment to test the utility of mulching *specifically*. I took up two dwarf pears, two years old, trimmed their roots and pruned their tops alike, and replanted within ten feet of each other. One I mulched three inches deep with tan-bark; the other was left without anything. In the fall I took up both trees for examination. The mulched tree showed innumerable new rootlets, while the other had no visible sign of any change, other than the granulation of the cut. The mulched tree made plenty of new wood; the unmulched very little—yet both seemed in good health.

At another time I employed a man to take up some fifty pears, four years old, (standard); each as lifted to be replaced in the hole and slightly covered, intending to plant them some days hence. Upon taking them up subsequently, I found the rascal had cut all the roots off close to the stem, so that each would readily go into a half bushel measure. Determined, if possible, to save them, I hit upon this expedient: a load of tan-bark was procured, and the trees buried two feet deep, save a portion of the tops; there they lay until spring, when the tan was removed from the branches. The 15th of May I planted them on the north side of a fence (shade), for a recuperative period. New roots had put forth in the tan. They came out fresh; all lived, and have done well.

Three years since a piece of land came into my possession, having at a prominent point a pear wilding, probably fifteen years old. At first I concluded to cut it down. But on reflection—a tree being easier cut down than built up—I determined to make an experiment with it. I had finished grafting some weeks before, and had thrown a small bundle of Bartlett scions in the wood-house. Upon the 12th of May I picked up those dry scions, headed every branch of the tree, excepting one, to within five inches of their base—cleft grafted them, eight in number—one in each branch, the branches being about an inch thick. Six of the scions I covered entirely with dissolved shellac. The other two were left as usual. The six grew finely, while the *two* died out! This season the tree bore some very fine specimens. Now, it may be said this case is irrelevant; but not so. The scions were *mulched*—that is, evaporation was checked so long as needed.

We should not forget the fact, that all our popular fruits are entirely artificial. The normal condition of the plant has become changed. Their tissues have become lax, and their constitution more or less enfeebled. The wilding has strong and vigorous roots, with generally a long tap-root. Their wood is firmer, of closer texture, and possesses a much greater vitality, and hence needs not those aids practice finds necessary to employ, to insure success with our more edible fruits. There *are* some certain varieties of our high-bred fruits, whose peculiar habits enable them to bear much better than others the alternating influence of drowth and moisture—the Heart and Bigarreau cherries, for instance. Their roots penetrate deeply into the soil, while the roots of the Duke and Morello varieties are horizontal and near the surface, and especially need mulching. But of all fruit-trees, none require mulching so positive as the dwarf pear. The quince roots are fibrous, and lie near the surface; a continuous and large draft of properly eliminated sap is demanded by a vigorous growing top, which should it fail only temporally, growth ceases, and a *stunt* is the result, which rarely recovers itself. Tolerable care in planting, with a suitable mulch, will insure the safety of at least eight of every ten; while eight-tenths die or fail to do well without it.

In transplanting trees, stones of all sizes, and bricks, whole or broken—not rejecting bones—I have an especial favor for. They are placed in suitable position among the roots. They are called "*mulchers*," and have, I conceive, a valuable office to perform. They not only drain the soil, but keep it moist and cool at midsummer. They are, in fact, a "mulch" of the second degree. On the 10th of September, ult., I planted an acre of strawberries. The weather was hot and very dry; the soil had been several times plowed in July and August, and was *very* dry. The plants as taken up were carried to the shade of a tree, where they were trimmed, that is, part of the leaves were cut off, and the roots shortened one-half with a pair of scissors. They were then dipped in soft mud, and carried to the planter in a basket, three or four hundred at a time. A German woman planted, while another followed close on with the tan cart, and dropped flat upon the plant about two or three quarts of wet tan. When all was so done, the cultivator was run lightly through, leaving all neat and smooth. Had some novice seen the plat at this time, he would have gazed in wonderment at the conical heaps of tan; rarely any of the leaves were visible. Subsequent rains, however, partially uncovered them, and in about three weeks after I sent the planter with some score of plants to re-plant misses. She brought

full two-thirds of them back, as not required. They have now, November 10th, made new leaves, and are strong for the winter. Pray now, what am I indebted to for these successes, if not to Mulching?

[The above has been on hand some time, but has lost none of its freshness, and is now in season. Mr. C. writes warmly; but he does not understand the drift of the discussion at the meeting of the Pomological Society as we understood it, which we think was mainly directed against excessive mulching. We have not the proceedings at hand, but will look them up, and recur to the subject again.—Ed.]

PLANTING SHADE TREES.

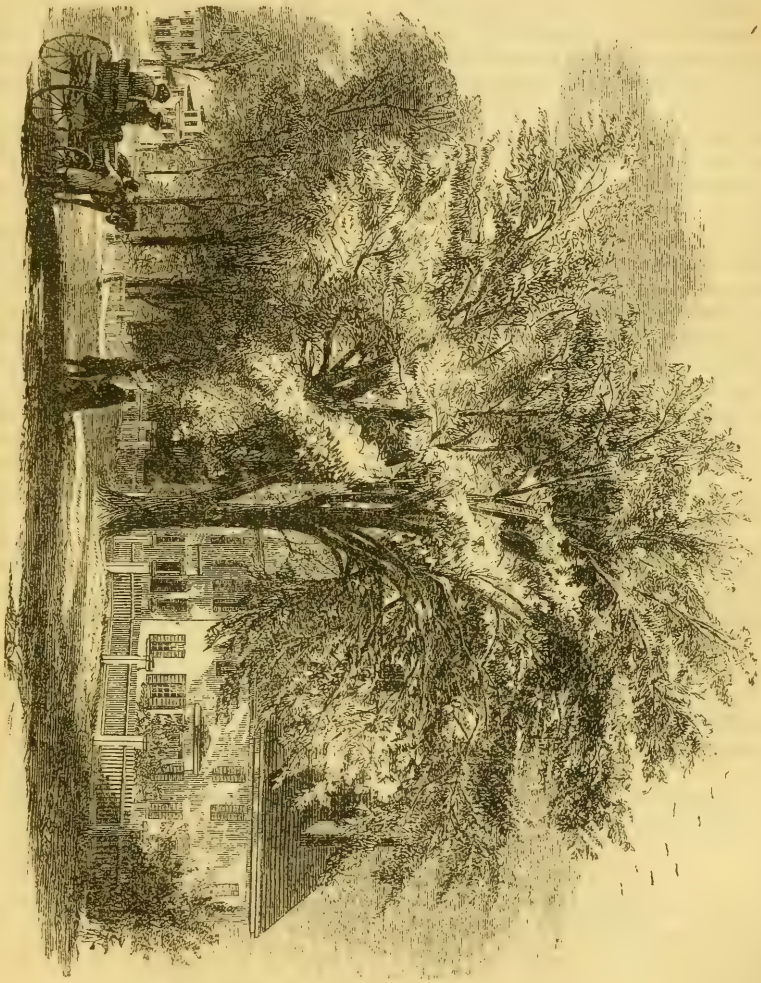
BY P. R.

When the poet Keats was lying on his death-bed in Rome, he requested that the epitaph on his tombstone might be, "Here lies one whose name was writ in water." From his earliest years he was an ardent lover of flowers, and many of his happiest hours had been spent in watching their growth and wonderful unfolding. A few days before he entered the "undiscovered country," he said, "I feel the flowers growing over me." A little headstone marks the spot where his ashes lie, on which are rudely carved, with impatient fingers, his name, age, and the epitaph I have quoted. No careful hand has planted tree, or shrub, or flower, above the spot; but the daisies he loved so well crowd in profusion the little mound above him, and keep tender vigil over the once genial and palpitating heart. But, although the dust of the desponding poet sleeps not by the side of his illustrious *confrères* in Westminster, his name is not "writ in water," but in the hearts of thousands from which come answering echoes to the sweet, sad strains he sung. His love for flowers found frequent expression in lines of liquid melody.

Few are the men who would not, if they could, leave some indication behind them of a passage over life's ocean, when their voyage is overpast; but with most the waves close up behind, leaving no track nor trace, no vestige of foam or ripple, to tell succeeding *voyageurs* that a life has passed that way before them. A few—men of genius, or unquestionable ability—succeed in stamping their impress on all coming time by literary labor, or works of art, or political wisdom, or military power; but a vast majority make their exit, leaving at best but a faint and short-lived shadow behind—a fine dwelling, perhaps, or more likely an epitaph—"Sacred to the memory of —— ——, a kind father, a good citizen," etc., etc., coldly cut on some marble slab by surviving relatives. Plenty of such "names to live" may be found in country churchyards and our more imposing city cemeteries.

But no one, especially in the country, need be forgotten. A man may perpetuate his memory, and establish himself impregnably in the hearts of thousands yet unborn, *by planting shade trees.* There is no danger of planting too many. The streets of every city, town, and village in the land should be lined with these green and grateful sentinels, so that, in the dim future, the traveller, weary and foot-sore, toiling along his dusty way beneath a broiling sun, shall look up and say, "Bless the man, whoever he was, who planted these beautiful trees! May he be resting to-day beneath the green foliage of those on the banks of the River of Life!"

Thoughts like these were passing through my mind not long since, while



THE OLD STICKNEY RESIDENCE, CONCORD, N. H.

riding through some of the smaller towns and villages of New Hampshire, towards its capital. Many of those village streets are handsomely supplied with thrifty shade trees—sometimes elm and sometimes maple. Although much more attention is paid to this cheap but beautiful ornamentation of the public thoroughfares now than formerly, still the mass of the people are not yet awake. Why is this? Is it because man's innate selfishness argues, "I shall not live to get the good of them, and so what is the use of putting one's self to the trouble?" Shame on such short-sightedness—such folly! Will men never learn to care for others, and by so doing care for themselves? Who of us does not expect to be here ten years hence? Yet ten years will give a fine growth to an elm or a maple planted in 1860. And besides, what should we have had valuable to-day had our fathers and grandfathers done as we are doing? They were willing to sacrifice themselves for the *future* and their children! Let indolence and selfishness no longer triumph; let us reform, and let us begin *now*.

As I approached the town—passing, meanwhile, the granite obelisk that marks the spot where five of her ancient citizens were scalped by the red men, and others taken captive—I listened, in imagination, for the whoop of the painted savage; but only sights and sounds of civilization met me. The primeval forests were gone, and the curling smoke from the red hunter's wigwam had long since disappeared above the tree-tops. Instead, cultivated fields, now covered with snow, and white men's dwellings, met my view. The thermometer stood at zero; the clouds were feebly shaking the snow from their shaggy coats, and so I hurried on. When I reached the little eminence that overlooks, and yet is a part of, this gem of New England towns, I stopped, a brief space, to look on the city below. For two miles and more in length, between my stand-point and the broad meadows of the Merrimack, the beautiful city lay stretched before me—beautiful in its long and wide streets of fine residences—beautiful in its quiet, and apparent peacefulness, scarcely permitting a thought of strife, and contention, and jostle, among the dwellers below—and especially beautiful, even at this inclement season, in its myriad shade trees, whose bare arms were held aloft, high above the house-tops, toward the great Source of revivifying power. One has a touch of human feeling for trees in winter, with their limbs all unprotected, especially in the climate of northern New England, and would fain wrap around them some warm covering, and stanch their flowing tears.

> "Yon naked trees, whose shadie leaves are lost,
> Wherein the birds were wont to build their bowre,
> And now are clothd with mosse and hoarie frost
> In steede of blosomes, wherewith your buds did flowre;
> I see your teares that from your boughes do raine,
> Whose drops in drerie ysicles remaine."

So sang old Edmund Spenser three hundred years ago; and if the trees rained tears then, why not rain them now?

But often have I stood on this same spot, and surveyed the scene before me, when

> "Iolly Iune, arrayd all in greene leaves,"

had buried the city almost as deep in its wealth of foliage, as Herculaneum and Pompeii were in the lava and ashes of Vesuvius. There are a few towns in New England where little remains to be desired in the matter of shade trees—and the capital of New Hampshire is one of them. It can boast its miles on miles of trees; indeed, from any point overlooking the

town, it presents the aspect of a "grand old woods," with here and there a public building, a church spire, or a spacious dwelling peering through the green. The trees are principally maple and elm. And here I must be allowed to digress, and say, that while the maple is a remarkably fine shade tree, and of rapid growth, in my humble opinion it will not bear comparison with the elm, nor can any other of our forest trees. Among them all, the oak, perhaps, is monarch. He has an imperious will, a kingly bearing, and he scowls defiance at his foes. He was born to rule, and he has "ruled in the greenwood long;" there let him remain, our boast, our pride, and the subject of our song. But the elm—the noble, dignified, social, parental, cheerful, good-tempered elm—let him come almost to our very fireside, our door; throw over us his protecting arms, shade us from the noontide sun, shelter our birds, and, in concert with them, sing us our morning and our evening songs. Heaven bless the elm, and bring it to the haunts of men in a profusion that shall know no end!

A large proportion of the shade trees of Concord are elm—trees planted a hundred years ago. The accompanying engraving represents a dwelling of the olden time, the frame of which is one of the most venerable in the city. It was originally built as a kind of fort in troublous Indian times, and is of massive oak. Many are the changes it has undergone since then; but while decay has long been gnawing at its vitals, and generation after generation has come and gone beneath its hospitable roof, the old veterans of the past, that have smiled and wept alternately in sympathy with those beneath them for a century of years, still live to mourn the demise of the hand that planted them; and future generations will admire and love them. The men who planted those trees and multitudes like them there, though dead, "still live." Their names were not "writ in water." The benedictions of grateful thousands who walk those streets, follow those public-spirited, noble, unselfish benefactors, who planted for posterity.

Then plant shade trees—plant them along every street in city, town, and village, and they will live when you are gone. Children—your own, perhaps others'—what matter?—will play beneath their swinging branches; year after year the birds will build their nests among the leaves, and whisper to each other their little loves; many a weary wanderer will weave a web of happy thoughts as he looks up to their intertwining boughs, and, from their refreshing shade, gather fresh courage for a continuance of his journey to that "better country," where there is "no burning heat by day;" and all this when "Sacred to the memory of ——" shall be effaced by the rude hand of Time from the prostrate and broken stone that once marked your burial-place.

TOWNSEND OR SEAGER APPLE.

(See Frontispiece.)

BY CHARLES DAVIS, JR.

Herewith I send you a drawing of an apple known in this neighborhood as the Seager, but Downing describes one, a native of Pennsylvania, which very nearly agrees with the characteristics of this fruit, under the name of Townsend; the latter will, therefore, probably prove to be the proper name. However that may be, it is worthy of notice and more extended cultivation.

The inclosed sketch of its history is furnished by Charles Sitgreaves, Esq.,

who is well acquainted with the fruit, and he considers it "the best early apple grown."

Tree vigorous, and produces good crops. Fruit large, roundish-oblate. Skin smooth, waxen, greenish-yellow, much shaded with brownish-red. Stalk slender, about an inch long, set in a smooth, deep cavity. Calyx small, closed, set in a moderately deep basin. Flesh white, tender, and juicy, with a rich and pleasant flavor. Maturity 10th of August to beginning of September.

The following is Mr. Sitgreave's sketch of its history:

The original tree grew on a tract of land owned by Indians near Lumberville, in Bucks County, Pennsylvania, and was of enormous size anterior to the Revolutionary war, when the tract was sold by the Indians, with a reservation "that the fruit of this tree should be free to all, as it had been to them and to their fathers."

The trees at Philipsburgh, New Jersey, derived from this grandfather stock, were three times larger than the average size of apple-trees, and died of old age some years since.

IONA ON THE HUDSON.

BY SOLON ROBINSON.

About three miles above Peekskill, and prominent among the jutting promontories that slope up from the water along the ten miles to West Point, stands one, if not more prominent, more noted than any of its green-wooded fellows, from the fact, that from some fancied resemblance, in rock or wooded outline, to the prominent features of that old saint's face, it was named by the early navigators of this rock-bound river, "St. Anthony's Nose." By that name the navigators of the Hudson still know it; and transient passengers, by water, who have read its early Knickerbocker history, still ask to have it pointed out; but the passengers along the rails, although anxious to catch a view of so prominent a historical object, are denied the opportunity; for the Hudson River Railroad company have bored through the very gristle of his saintship's nose, and at the very time passengers might desire to look upon its outlines, they are shut up with darkness in the rocky, tunnelled chambers through the nostrils.

Directly under the shadow of St. Anthony's Nose, over against the opposite shore, lies an island, long known by a corruption of the former owner's name, but now, just beginning to be recognized by its new appellation of Iona. This name was given to it by the present proprietor, or rather by his father-in-law, Mr. Bevridge, in memory of a Scottish island of that name, the seat of active missionary labors to the neglected inhabitants of the adjoining mountains. And this name was also applied, because it was his intention, besides making this a health-restoring residence, to try to extend from it some religious and educational advantages to a very isolated mountain population, in the upper corner of Rockland County, which is as destitute of such advantages as ever were the Highlanders in the vicinity of the Scottish Iona.

"What is this Iona, and what do all these singular buildings mean?"

That question we intend to answer, and with it not only gratify curiosity,

but at the same time incidentally give the reader some as valuable information as we have ever penned ; for we shall tell them how to produce two or three kinds of the richest fruits grown in this country, upon as unforbidding a soil as any of them happen to possess. And we shall tell them, too, of the vastest propagating houses ever erected in this or any other country, for the sole purpose of growing grape-vine plants under glass, as a regular nursery business. We think we shall astonish some old hands at the business, as well as surprise that class of people who have no conception of the power of man, working with science—that is, with reason and common sense, aided by experience—to multiply valuable plants to meet a sudden, pressing demand.

But first, of Iona. It is an island of 300 acres, about two and a half miles from Peekskill, about half of which, next the mainland, is a partially salt marsh ; the rest is rocky. On the side next the mainland is a narrow creek dividing it from the shore. From this point is a very circuitous mountain path, scarcely ever travelled, but over which a team may be driven out into a civilized region. The way of approach, however, for all visitors, is by row-boat.

The upland of the island is, more than two-thirds of it, a rocky woodland, thinly covered with cedars of that peculiar form often noticed in this region, and never seen, so far as we can learn, in any other. They are not only singular, but singularly beautiful, the limbs of both large and small trees forming perfect symmetrical cones, sometimes not over four or five feet in diameter, in trees forty feet in height.

The arable portion of the island consists of about forty acres, elevated, at its highest point, perhaps forty feet above the water. The soil is composed principally of drift, which embraces in its composition almost as great a proportion of pebbles as any old field gravelly knoll in the State.

Ten years ago it certainly was a very unpromising spot for a fine vineyard and extensive pear orchard. It was owned by a man whose greatest wealth, besides the land, consisted in eighteen sons and daughters; but their father did not know how to apply these hands to develop the richness of his lands, and his chief profit came from the crop of natural marsh hay. This and the scanty crops of the poor old fields were insufficient to support the family, and they eked out a living by fishing. We shall see presently what the present crop is; and how many the island now supports, without either the leisure or need for fishing.

This island was purchased about ten years ago, for $10,000, by Doctor C. W. Grant and Mr. Bevridge, his father-in-law, of Newburgh, with the intention of devoting it to the culture of grapes and pears for the New York market. Mr. Bevridge at once took possession, and the Doctor devoted to it all the time he could spare from his professional practice ; but it is only about six years since he took hold in earnest to see what could be made of this naturally hard-featured spot.

Although the soil would appear to a person who lived on a rich prairie, a coarse gravelly mass, it is really in a high state of fertility, and perfect disintegration, two or three feet deep. But a small portion needed draining ; the deep trenching was sufficient; but all needed high manuring, before it could be expected to grow such vines as only will produce fine grapes, or such trees as can alone be depended upon for high-priced pears.

At first manurial substances of various kinds were imported, but enough to suit the Doctor's notions could not be had that way.

The marshy part of the island, upon examination, was found to be composed of silt, much of which had been deposited since the hill-sides of the upper part of the river have been annually washed of their richness, loosened by cultivation, upon which a great mass of vegetable growth has accumulated. Here, then, was the great reservoir out of which to draw fertility for the upland; a reservoir so great that it is inexhaustible by any ordinary amount of human labor. It is better than a mine of iron ore, for which a near-by pile of rocks has long held a high value. Yet rich as this mine is, "surface diggings," too, at that, the former owner, in all the time that he had lived here while his eighteen children were growing up around him, had never discovered its great value, though he sadly needed something to make his gravelly upland more productive.

It remained for the present owner to open this mine, and most effectually he has done it. From the closest figuring of the amount he has taken year by year, and the quantity applied per acre, we conclude that about *ten thousand cords* of muck have been taken since the purchase of the island ten years ago, and much the largest portion within the six years that Doctor Grant has been actively operating.

As this muck is not in good condition to use as it comes from the marsh, the following plan has been adopted for cheaply making a most valuable compost. The hay of the marsh is carefully saved by stacking it upon platforms, on the soft part, until the frost makes a bridge, and from the part where a team can travel it is brought at once to the barn and stacked. A large portion of that cut from the driest part is excellent hay, from a jointed grass, and all but the very coarsest is greedily eaten by cattle. But a stock sufficient for its consumption cannot be kept on the island, but it can be obtained from the mountains in any quantity, to board five months at $1 to $1 50 a month, and so some 60 or 70 head of young cattle are taken in every winter for the purpose, not so much for disposing of the hay, as for obtaining a cheap solvent for the muck, which their droppings furnish.

From the driest portion of the marsh, a sufficient portion of muck is dug in summer to spread a foot deep or more over the extensive barn-yard, and this being covered with a thick coat of coarse grass is ready for the winter. If the tramping of the cattle work up mud, it is covered up with more waste hay, so that the animals have a dry bed all the time, and here the portion that are not stabled, spend the winter, water being provided in the yard.

Muck is also spread in all the stables, and absorbs all liquids, and during the winter a great mass of it is dug and hauled from the marsh to the yards and stables, or in piles for future use. In the spring the contents of the yard, some two or three feet deep, are not at once removed, but suffered to remain till a convenient time during the summer, and until so much decayed as to make the work of handling easier, and then this great mass of rich manure is overhauled and carried to convenient spots, and stacked up for future application to the land.

Whoever saw this place in the occupancy of its former owner, saw that the surface had been slightly scratched over, and what was called soil was not in a condition to produce any thing but the scantiest crops, and of fruits it had next to none. Below the soil there was a compact mass of gravelly loam, sufficiently clayey to be productive if allowed a chance, and suffi-

ciently loose when broken up, to require very little under-draining. Only in one spot where the water-shed brings the course of the natural drainage down to a rock dyke, and thus to the surface, has tile draining been found particularly advantageous.

Like hundreds of other farms, in all these hard-featured granitic counties of Southern New York, this had long been called "worn out;" a term as inappropriate when applied to a farm as it would be to the walls of the Palisades. This is evident to whoever sees it now, for he will see a pulverulent soil of two to three feet deep; the sand, gravel, and clay, homogeneous with an abundance of vegetable matters, making a dark, friable, highly productive, and easily worked soil, requiring very little annual outlay of labor or fertilization to keep it in the most perfect working order. It is now in a condition to give back a profitable return upon the original cost, and all the expense of improvement, and the labor of cultivation.

And this has mainly been effected by muck—nothing but muck, just like the inexhaustible supply upon half the farms in this part of the State. It is true, that at the commencement of operations, sundry sloop loads of animal manure, salt, lye, lime, plaster, and the waste of manufactures of various things, were brought to the island, but these were all adjuncts of the muck, to aid in its decomposition, or to be used as immediate fertilizers while that was preparing, as it is not considered profitable to apply it in its raw state; but after it has lain six or eight months in the cattle yard, and has then been piled and lain some months longer, the whole mass is considered more valuable for manure than it would be if composed entirely of cattle droppings. In fact, the addition of any animal substance to muck, has an effect not unlike the addition of yeast to flour, and the fermentation and decomposition is hastened by such an addition in about the same proportion as the fermentation of the moistened flour by the yeast. And as bread is greatly improved by the process of kneading, so is the muck by a similar process: the more it is stirred, the better it becomes, and its lasting effects in the soil are remarkable. Its effects in the soil of this once almost sterile island, are not only remarkable, but sufficient to satisfy the most sceptical farmer that its use would be profitable.

As soon as possible after the purchase of the island, ten acres of ground were prepared for a pear orchard, though not as well prepared as the Doctor would now prepare before planting, and the consequence has been, that the labor of deep trenching and thoroughly mixing the soil and compost two to three feet deep, has been done in a great measure since the trees were planted, at a great additional cost of labor.

"No pear orchard should be planted," says Doctor Grant, "until the land is trenched two to three feet deep, and thoroughly worked up and mixed with compost; and if inclined to be wet, perfectly tile-drained; and then there is not the least difficulty in producing great crops of the richest kinds of pears grown in this country."

In proof of this we witnessed as fine a display of fruit as we ever saw upon so young an orchard. The trees not only hung full—too full for any but land in the very best condition—but the fruit was large and all of excellent appearance, and such as was then in condition for eating, we can attest was excellent in flavor. In short, its richness showed the high state of cultivation of the trees. All the fruits of muck and deep tillage.

Reader, have you ever thought that you can not produce rich fruit upon

poor soil? That you need "fat pasture" to make fat pears, just as much as you need "fat pasture to make fat calves?"

Doctor Grant has now in bearing upwards of a hundred kinds of pears, nearly all of which he has proved worthy of cultivation, either as standards or dwarf, and some of them as both.

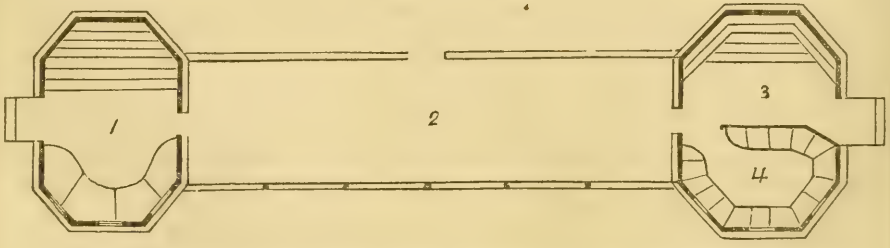
"But, Doctor," we said to him, after spending some hours in the pear orchard, "men in ordinary circumstances can not, or at least will not, plant trees of a hundred sorts. A farmer might grow five; a retired citizen, with a taste for horticulture, would not exceed twenty; and if one could get an assortment of summer, autumn, and winter, by planting trees of twenty sorts, the probability is that ten would grow pears where one would if he had to plant a hundred. Now let us make up such a list, as we walk about among them, with a few notes upon the character of each, from which an amateur can judge how each is suited to his particular wants. Such a list, that can be depended upon better than some nurseryman's recommendation, will have a tendency to increase the cultivation of this valuable fruit."

[The Doctor and Mr. Robinson continued their walk, and made out the proposed list of pears, which we have already given to our readers. One more article from Mr. R. will "finish up," we suppose, Iona Island. We would direct special attention to Dr. Grant's mode of using muck. A bed of this material is as valuable as a mine to the man who may be so fortunate as to possess it.—Ed.]

AN AVIARY.

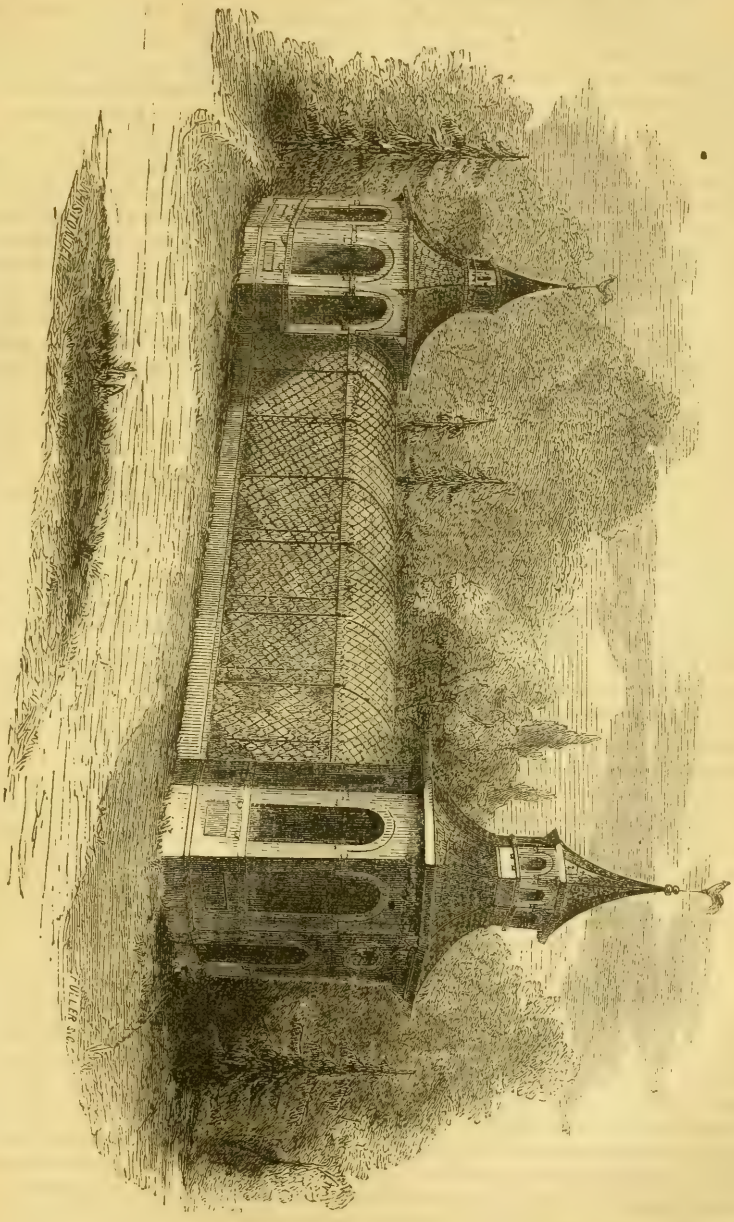
BY WILLIAM H. WILLCOX.

The Aviary, of which the accompanying drawings are illustrative, is now erecting on the grounds of John Anderson, Esq., at Tarrytown, N. Y. It is situated on a finely rounded and wooded knoll, in full view from the house site, and borders on the "Drive." Being well sheltered on the north by a grove of healthy and luxuriant pines, interspersed with deciduous trees, and well drained and cleared, a more favorable situation could not possibly have been selected.



The structure consists of two towers, connected by a long range or "Run" of wire-work, this "Run" being 45 feet long, 12 feet wide, and 12 feet high. The towers are octagonal, 10 by 17 feet inside dimensions, one (marked 1 on plan) arranged for the reception of feed bins, and one for nesting, (3,) and both accommodated to roosts, (4.)

In the centre of each tower, from the ceiling upwards, are placed venti-



AVIARY OF JOHN ANDERSON ESQ., TARRYTOWN, N.Y.

lating shafts, which, while extracting the vitiated air and keeping the rooms sweet, yet are so arranged as not to permit the communication of one family with another, if desired. The space inclosed by the lower roof is devoted to fancy pigeons, and other birds, of which a large number of rare breeds must be accommodated ; from these, openings lead into the "Run." The octagon houses over these chambers, and with no inner means of communication, are intended for the lodgment of the more common birds.

The "Run" is inclosed all over with diamond wire-work of about one inch mesh, and small wire ; it is secured in strong frames to the upright bars and rafters, which are also of iron, and all galvanized. It makes a neat and airy inclosure, will not permit the birds strolling out, and precludes the possibility of destructive animals entering from without; ample room, with abundance of light and air, is thus afforded. It is being erected by the well-known house of Hutchinson & Wickersham of this city, who manufacture a great and pleasing variety of horticultural articles and structures in iron. The same firm are now making a Duck inclosure for Mr. Anderson, the plans of which it will afford me pleasure to place before your numerous readers in a future number.

Mr. Anderson, with a fine feeling and taste, has skilfully managed his "place," and out of scant thirty acres, will soon produce a perfect Elysium, an achievement rare, even in ten times the size. A short year ago, and the site was a rough forest growth, with no associations save those which the genius of Irving hallowed; but the present proprietor has seized upon its charms, and with judgment, cautiously and carefully improved and heightened its natural developments. The Drive, particularly, is well managed, and conducted through the most pleasing points of view ; and although the openings are not numerous, this is rather a fault on the right side, since Mr. A. has only just commenced operations, and to hazard destruction, without calm reflection, is to engender ultimate regret. In another number I may be tempted to describe this fine estate.

[Mr. Willcox's modesty probably prevented him from saying that the above design is by himself, and we therefore give him credit for it. We have seen a number of architectural designs by him, evincing good judgment and taste, and we shall be glad to hear from him again. We have removed his post-office address from his signature, and append it here. Box 365, N. Y. post-office.—Ed.]

ORCHARD HOUSES.

BY H. W. SARGENT, "WODENETHE," FISHKILL LANDING, N. Y.

Leafring, in your April issue, asks for some information about Orchard Houses. As I have had some experience in this new mode of culture the past three or four years, I shall take the liberty to answer his question.

Leafring should not have planted his trees in November, or rather the trees should not have been put into the house at this time, and I should very much question the advantage of getting them at all before the spring, since a tree taken from the ground in November, and put into a pot, would hardly get sufficient root-hold to be secure enough to be kept back in a cold or pit house during the winter.

In the first place, the trees, vines, &c., should be planted in pots (13 by 13,) or one size less, *not* boxes. Early in April, if not in good shape, they should be cut back to three or four buds, and then brought into the house. Presuming that Leafring understands their subsequent summer treatment, the proper amount of watering, syringing, pinching, &c., and above all, the great care necessary against the attacks of red spider, with a careful ripening off the wood in the autumn, I proceed at once to their winter treatment, where I think he has made two principal errors.

In our extremely cold and disagreeable winter, we wish our wood to be *entirely* ripened off. Leafring, instead of giving his trees "a good soaking," as is the custom in the entirely different English climate, should have watered his plants, after October, barely enough to keep them alive, and ripen them as much as possible. In fact, if out doors, they should be moved under cover at the sign of any storm.

In the second place, he could not possibly have done a worse thing than to put them into his house at the beginning of winter, and to leave them there, subjected to the tremendous alternations of 60 degrees by day, and perhaps zero, or a little above it, at night. He is very much mistaken, or I certainly am, if he thinks his thermometer does not get *below* 40°.

I think there were nights last winter, and every winter, when the mercury in any glass-house without fire, will get down nearly as low as it does outside, in the same way as a powerful January or February sun will carry it up to 70° or 80° during the bright hours.

All orchard-house trees in pots, in this country, should unquestionably be removed at the approach of winter, to some cellar or pit, where they get *very* little or no frost; or, if necessary to be kept in the orchard-house, they should (in their pots) be heeled-in pretty deeply, and the trees above ground shielded as much as possible from sun by mats or hurdles platted in straw, or even boards ; but no sun should be allowed to come to the trees, and no, or little frost to the root, until the time to begin to force, if fire heat is used, or until it is safe to commence without fire, say 20th of April to the 1st of May.

In either case, they should be very carefully taken up, so as not to injure the buds ; the trees and pots washed, dressed with a rich mulching, and syringed, and the temperature not permitted to fall below 50° by night, with plenty of air by day.

It is almost impossible, in our long, dry summers and intense suns, to keep the trees from red spider; therefore I have found it best to move all my pots out about the first of June, sink them in the ground, and mulch the surface. In this way, there being less evaporation, the plants require less water at the roots, though constant syringing in very bright, dry weather.

By adopting this process, particularly by removing all the plants into a cellar during the winter, and keeping them very dry, and as early in the spring as you choose to force, (I generally begin 1st March,) moving them back again until 1st June, I have succeeded in getting the finest possible fruit, and in the greatest abundance, of every variety—Apples, Grapes, Cherries, Plums, Nectarines, Apricots, Peaches, Figs, etc.; in short, with a good cellar or pit from November to March or April, and an orchard-house from April to June, with an outside bed or border from June to November, one can raise any variety of the above-mentioned fruits, in perfection. In fact, in our climate in America, I believe a light, airy cellar, free from much frost, is alone necessary in order to protect the plants from November to

April, when the pots could be brought out and sunk in the ground. This method of cultivation, however, would not advance the trees much, if any, over those planted in the ground outside, but would have the advantage only of winter protection under cover. The fruit, however, would be as fine as if started in an orchard house.

The great and (if one has a cellar or pit for the trees in winter) the only use of an orchard house in this country is, from my experience, the advantage of introducing fire heat during March, so as to give the plants one month's gain over outsiders. This advantage allows the fruit to become sufficiently large to resist the attacks of the curculio, when the weather is warm enough to require the ventilators opened, or when the plants themselves finally are moved out.

I have, at this moment, Peaches covered with fruit, which less than one year ago were planted in a 13-inch pot, and cut back to a naked stem (stick) *four inches only long.*

[Mr. Sargent has probably had more experience with the "Orchard House" than any other person in the country, and Leafring, in common with others, will thank him for the valuable information contained in his article. Mr. Sargent's position, that the only use of an orchard house in this country is to forward the fruit, is no doubt the correct one. We grew fruit-trees in pots many years ago, and have elsewhere given our views on tha subject. Leafring, in addition to the error of placing the trees in large tubs, made another, and a serious one, in the purchase of trees of large size, as we have had occasion to say to Leafring personally, from whom we had the pleasure of a call; and we may just as well say here, (and we blushed not a little when we discovered our mistake,) that Leafring is not a man, but a real woman, whose name would be recognized by thousands should we mention it; but that we shall not do at present. The joke was too good to be lost, and so we have preferred to let Mr. S. also call her "him."—Ed.]

FAIRIE'S VENUS' SLIPPER, (CYPRIPEDIUM FAIRIEANUM.)

(From the *Revue Horticole.*)

The tropical orchids have for a long time been objects of intelligent culture, and amateurs have not feared to make considerable sacrifices for the acquisition of these choice plants. It is desirable, also, that we should have introduced into our gardens some of the more remarkable kinds of native growth. Why, therefore, have we not hitherto had attempts in this direction with our indigenous species? Those persons who are familiar with the *Orchis fusca*, *militaris*, *galeata*, and *ustulata;* the *Anacamptis pyramidalis*, and the *Ophrys*, the charming flowers of which imitate the forms of different insects, will agree with us that these species would be a treasure for the ornamentation of our borders.

This omission of the indigenous orchids arises principally among us, from the fear so generally felt that these plants do not without difficulty succeed under cultivation. But if we are to credit the statements of persons who have experimented upon them for a long time, this fear is perhaps exaggerated. Not only do many of the handsomest kinds succeed without much trouble, but in reference to others an intelligent observation of their consti-

tution and of the *surroundings* which they require, can furnish valuable information as to the course to follow in their cultivation. As an example of this, we will state a curious fact observed several years since by M. Aug. Rivière, head gardener of the Luxembourg, who has since directed so skil-



PLANT OF CYPRIPEDIUM FAIRIEANUM, HALF THE NATURAL SIZE.

fully, in connection with his venerable uncle, M. L'Homme, the cultivation of the garden of the Faculty of Medicine, in which the collection of Tropical Orchids is one of the most complete now existing.

M. Rivière, with indefatigable perseverance, has also tried the culture of indigenous orchids. For a long time he was baffled by several species, notwithstanding all the care he bestowed upon them. Most of the plants died immediately; hardly one passed the second year of cultivation. M. Rivière then conceived the idea, that perhaps their growth or existence required that they should be in company with other plants. The experiments made by him for the purpose of determining this question had not at first any success. The grasses, among others, which he supposed particularly favorable to the orchids, from seeing them in nearly every locality where the latter were growing, were found to overpower them by the rapid development of their roots.

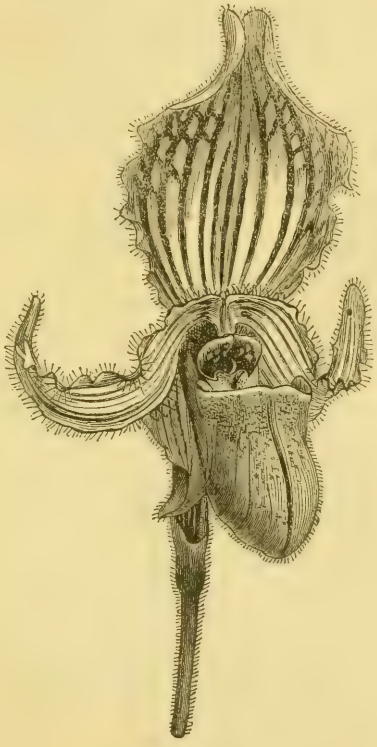
One day he observed on a tuft of *Iris florentina* which had been thrown aside a small orchid germinating; he separated carefully this portion of the tuft, placed it in a pot, and, to his great astonishment, saw it develop a vigorous plant of *Spiranthes autumnalis*. A happy chance had sown some seeds of this plant among the Iris. The *Spiranthes* was just one of the plants which had up to this time most obstinately refused to adapt itself to cultivation: the problem was therefore solved. He had at last found a companion acceptable to the capricious orchid. Subsequently, he replaced the *Iris florentina* by the *Iris nana*, more in conformity with the orchids, on account of its smaller growth, and from this time his *Spiranthes*, far from perishing, took a development and a condition of health and vigor, superior to any thing exhibited by them in their natural places of growth. The plants of these experiments are still flourishing in the garden of L'Ecole de Médecine, after eight years' cultivation, while experiments in cultivating this species by itself in heath mould, sand, and virgin earth, have constantly failed. M. Rivière informs us that he has also associated this *Iris nana* with several other refractory species, and that they find themselves quite at home and thriving in this society.

This interesting fact proves in an evident manner how much an intelligent observation of nature is useful in cultivation; it teaches us, at the same time, that obstacles supposed to be insurmountable, are sometimes overcome in a very simple manner. If then, as is our conviction, we should never forget to draw the ornaments of our gardens from the treasures of our indigenous flora, we believe we are acting in the interests of horticulture in recommending warmly the field orchids to those of our readers who admire not only rarity, but above all beauty of vegetation.

After this long digression, inspired by our constant wish to place in view the value of our indigenous flora, let us examine the charming exotic of which we now give a representation, drawn from a plant that MM. Thibault and Keteleer, with their habitual complaisance, have allowed us to use for the purpose at their place. The *Cypripedium Fairieanum* (see figure), originating in the East Indies, probably in Assam, was introduced into England nearly two years ago. The species was established by Mr. Lindley, and was named *Fairieanum*, in honor of Mr. Fairie, of Liverpool. It has some similarity to the *Cypripedium insigne*, of which, however, the flowers are smaller, and it approaches more nearly the *Cypripedium superbiens* of Riechenbach.

It is an acaulescent plant, of which the distichous leaves are close to the soil, rather broad, pointed at the summit, and carinate at their base. The scapes, each bearing one flower, have a length nearly double that of the

leaves ; they are upright, cylindrical, green, and hairy. The large and handsome flowers issue from a bract, ovate-lanceolate, pointed and hairy like the scape. This bract envelops the inferior portion of the ovary, which is elongated, deep purple, and covered with glandulous hairs. The perianth is much spread. The large superior sepal is cordiform, greenish white, veined with stripes of dark green and deep purple ; its summit is obtuse or somewhat crenated, the edges are undulated. The two inferior sepals adhere in one, of an oval obtuse form, showing also at the base, green and purple stripes. The two lateral sepals, curved in a singular manner like the horns of a buffalo, are undulated on the edges, white, and ornamented with purple



FLOWER—NATURAL SIZE.

and green stripes. The third sepal, or labellum, is very large, of a brownish green, reticulated with purple. The sterile stamen is orbicular, crescent-shaped, green, purple, and white, hairy, and has in the middle, between the horns of the crescent, a downy extension.

The *Cypripedium Fairieanum* flowers with Messrs. Thibault and Keteleer in September. The treatment of it is precisely analogous to that of the other species of the same genus.

THE CAULIFLOWER.

BY S. H. FRY, NEW BRIGHTON, STATEN ISLAND.

This much-esteemed vegetable is considered by many rather difficult to obtain, and also somewhat expensive, but, with a little judgment and forethought, Cauliflowers can be successfully grown, and with but a trifling expense. Where Cauliflowers are needed early in the spring, there must be the conveniences for growing them; that is, frames with two sashes, 9 or 12 feet long and 5 or 6 feet wide. You can have three successive crops in the spring, by growing the third in the open ground, trenched or spaded deep, not sparing the manure; for, remember, you can not manure too heavily for Cauliflowers. The seed for these crops must be sown in September, in the open ground, and the plants transplanted into a frame for the winter. Sow the seed thin, for short stout plants are much preferred, and plant them two or three inches apart each way; protect them from severe frosts, giving air always when the weather will permit; for, if kept too close, they will mildew and grow weak. In the month of February, prepare a hotbed for the first crop. There are two ways: one, by putting the manure into a hole or pit the size of the frame; the other, by building a heap on the level ground one foot or 18 inches larger than the frame, each way, so as to bank the manure up outside the frame. Generally this method is adopted where there is plenty of fresh stable manure at command. In making a hotbed, it is not altogether throwing up a heap of manure and putting a frame on it, but it requires to be thoroughly shaken out and well packed. When the bed becomes heated, cover the manure inside of the frame with 6 or 8 inches of turfy loam, allowing the first 6 or 8 days of burning heat to escape. By this time the bed will be sufficiently cooled down to receive the plants. Plant 6 or 8 in each light, at equal distances, giving air day and night at the top of the frame, for the first few days after, moderating it according to the weather. You can also obtain a crop of Lettuce or Radishes between the Cauliflowers, for they will be fit for use before the Cauliflowers are large enough to occupy the whole frame. After the small crop is taken out, fill in between the Cauliflowers with short manure, say 2 or 3 inches, and raise the frame by putting bricks or blocks of wood under each corner. They will now require plenty of water and to be closed early in the afternoon. When they commence to show flower, crack two or three leaves down over them, to keep the sun from them. I will describe the method I adopt to produce a second crop of spring Cauliflower. The most part of this is done in the fall; when preparing the frames for winter use, I choose a three- or four-light frame, and fill to within six inches of the glass with good rotten manure, and a covering of good soil; plant that full of Lettuce, which can be cut during the winter. About the middle of March, the Lettuce will be all gone; fork the bed over lightly, and plant out the Cauliflowers. You can also have another crop of Lettuce between them. When they get up to the glass, raise the frame, and fill in with short manure. Generally speaking, this crop does well, and produces fine flowers.

EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, &c., intended for the perusal of the Editor, and packages by Express, should be directed to the care of C. M. Saxton, 25 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."

THE spring has been an exceedingly untoward one. Many sections of country have suffered from long-continued drought, and all more or less from cold and frost. We gather from our correspondence that the Peach crop will be a small one; in many places it has been entirely destroyed. The prospect for Apples does not, on the whole, seem to be very promising; but of Pears we are more hopeful. Let us be thankful for what we have —In our notice of Mr. Bright's book, we stated that the single cane system was entirely new to us; yet at the time we were impressed with the idea that we had somewhere seen something on the subject; but being ill, and away from our books, we gave Mr. Bright the benefit of the doubt. We have since given some attention to the subject, and find that Mr. Saunders, on p. 422 of the HORTICULTURIST for 1859, recommends the single stem system, or, in other words, close planting, and cutting down the alternate vines each year. In this, and all other matters, we simply wish to give credit where credit is due. We also have an impression that we have seen something else on this subject, and we think in Mr. Meehan's Gardener's Monthly; and we shall find it, of course, if we are right. It may be that Mr. Bright wrote on the subject in the Monthly.

THE SEVENTEEN YEAR LOCUST.—As predicted, these locusts are now beginning to make their appearance in various parts of the country. Recently, in New Jersey, we saw numbers of them dug up. They are about six inches from the surface, but die on being exposed to the sun, owing to their being still in an immature stage of transformation. Chickens seem to be very fond of them, devouring them with avidity. Their progress and habits ought to be closely studied.

BLACK HAMBURGH GRAPES —We are indebted to Charles Butler, Esq., of Hart's Corners, for some fine Black Hamburgh Grapes. Bunch and berry of good size, finely ripened, and covered with a beautiful bloom. Mr. Ellis, his gardener, is one of the best growers we have.

We are indebted to Mr. C. N. Bement, of Poughkeepsie, for three samples of native wine, labelled Catawba, Isabella, and Claret, which he assures us are entirely free from adulteration, and we do not doubt it. They are fair samples of American wine, the best being, in our opinion, the Claret, and a good substitute for that wine. We are fast becoming a wine-making people, and we hope our wine manufacturers will avoid the villainous adulterations now so common with imported wines. If all are conscientious men like Mr. Bement and others, we shall have nothing to fear.

Some time since we received the circular of some association for improving villages by planting trees, or something of that kind. It "went" from our table with some other matters, but we should be glad to have another copy, since the subject impressed us very favorably, and we intended to lay it before our readers.

NANSEMOND SWEET POTATO PLANTS.—We have received a box of these plants from Mr. C. B. Murray, of Foster's Crossings, Warren Co., Ohio. They were in fine order after their long travel, and will be well cared for.

FRUIT CROP IN KENTUCKY.—Mr. Fruitt, writing from Hickory Hills, Ky., says: "The prospect for fruit in this part of the country is very flattering. I have some fruit of almost all kinds." We are glad to hear that some of our Kentucky friends have been spared by Jack Frost. Another correspondent, writing from Virginia, deplores the entire loss of the peach crop. We conclude, from all we can hear, that those who eat peaches this year will have to "pay" for them.

THE HOMESTEAD.—We learn that the *Homestead* has again passed into the hands of our good friend Mr. Weld, as publisher and editor. He is too well known to need any commendation from us. We wish him all manner of success.

A PARK IN ROXBURY.—The city fathers of Roxbury, Mass., have appropriated $70,000 for the purposes of a public park. We presume our friend, Mr. Walker, has had something to do with this. There is intelligence enough of the right kind in Roxbury to secure a park which shall be a real adornment to the city, if it is only rightly directed, which we trust it may be.

SWANS FOR THE CENTRAL PARK.—The swans presented by the city of Hamburgh to the Central Park Commissioners are now on their way here. Water birds constitute a beautiful feature of lake scenery, and we hope they will be freely introduced in the Central Park.

AMERICAN POMOLOGICAL SOCIETY.—We learn from the *Gardener's Monthly*, that the immense building of the Academy of Music at Philadelphia has been secured for the meeting of the American Pomological Society on the 11th of September next.

THE WEATHER.—There has prevailed extensively for a couple of months past a severe drought, which, with frost and snow, has been productive of much injury to fruit in various sections of the country, if our correspondence is to be relied upon. Mr. Garrett, writing from Calhoun, Henry Co., Mo., says, "We have not had rain enough to wet the ground two inches deep for two months, and last night there was frost sufficient to kill the corn and potatoes to the ground; and the leaves on some of the peach-trees, with the tender branches, are killed. Of course the tender fruits are all killed. Had it not been for this disaster, there would have been an abundance of fruit in this country."

THE PLOW BOY.—This is a new monthly of four octavo pages, published at Buffalo by H. C. White. We hope the "Boy" may soon grow up to the stature of a man.

WEEKLY SOUTHERN PLANTER.—We find this periodical omitted in our list. It is a folio of eight pages, published by Power and Cadwallader at Jackson, Miss., and edited by Wilson A. Purdom. Terms, $2 per annum.

YALE COLLEGE LECTURES.—We have already spoken of the value of these lectures. They have been published by C. M. Saxton, Barker, & Co., as reported by Mr. Olcott, with an introduction by Prof. Porter. Price 50 cents.

THE ILLUSTRATED PEAR CULTURIST.—This is a beautifully printed volume, containing prac-

tical directions for preparing the ground, planting, pruning, budding, &c., and a descriptive list of the best varieties, both for standards and dwarfs. The engravings are colored, and, with few exceptions, are well done; the outlines are particularly good. The work is for sale by C. M. Saxton, Barker, & Co., No. 25 Park Row, New York, and Starr & Co., No. 4 Main Street, New London, Conn.

WINE-MAKING.—At a recent meeting of the Farmer's Club, some interesting facts in regard to wine-making were elicited. Mr. Fuller has recently been to Cincinnati investigating the subject of grape-growing and wine-making, and from his account we make the following interesting extracts:

While trying some wines a few weeks since at the residence of J. G. Schneike of Cincinnati, who has experimented with as many varieties of native grapes as any other man in this country, he made some statements which may be interesting to the members of the Club.

He said he considered the following the best six wine grapes for the vicinity of Cincinnati, and should rank them in the following order: Delaware, Herbemont, Minor's Seedling, Lincoln, Catawba, Union Village.

With the Diana he had had but little experience; but from the wine he had made from it, he was inclined to place it next to the Delaware, in the place of the Herbemont, as that had been found to be very uncertain in its crops, as the vines are too tender for that climate.

The Delaware wine was the richest, and preserved the real *bouquet* of the grape, and it improved by age. The vintage of 1859 contained 8½ per cent. of alcohol.

Herbemont is very uncertain. No good wine was made from it from 1850 to 1859, when the crop was good. The wine is very good, quite delicate, and will not bear transporting to any great distance. Alcohol 5½ per cent.

Minor's Seedling.—This is quite foxy in flavor, but makes a fine light-colored wine. Alcohol 6 per cent.

Lincoln.—A dark-colored wine; resembles the finer grades of claret, but is much better than that we generally import. Alcohol 4½ per cent.

Catawba of 1859.—Much body and strength; light amber color. Alcohol 8 per cent.

Union Village.—A beautiful dark-colored wine; not much body or strength; will make a fine, light summer drink. Alcohol 5½ per cent.

These wines were all made from the grapes, without the addition of sugar or any other substance. The grapes are gathered when very ripe, and all green, broken, and decayed berries are picked out and thrown aside. All the apparatus that belongs to wine-making is kept in perfect order, and cleanliness is a prominent feature in the vineyards of Messrs. Mottier and Schneike, as it always should be in every establishment where good wine is expected to be made. The wines of Cincinnati have already become so celebrated that they sell for a much higher price than many of our imported wines. Large quantities of poor Rhine wines have been imported and taken to Cincinnati, and there put upon the lees of the Catawba and fermented with them, and then sold for Catawba wine, and at a profit; for Catawba will bring $1 25 per gallon, and cheap claret can be had for 50 cents, after paying the duty which has been imposed on such wines the year past.

To show that our pure native wines are not so strongly alcoholic as many of our common drinks, we will give the amount of alcohol that some of these beverages contain. Of course they vary much in different specimens, but this list will show nearly the average:

Currant wine,	20 per cent.	Elderberry,	9 per cent.
Porter,	23 "	Cider,	7½ "
Champagne, pure,	12 "	Ale,	7 "
Gooseberry,	12 "	The lowest Rhine wines,	4½ "

The range recently introduced by Bramhall and Hedge possesses some features which make

it desirable as an appendage to the country home, more especially where warm water is in demand, and this is generally the case. The consumption of fuel in actual use is comparatively small, and this is a matter of no small moment. Inventors of ranges should more frequently have an eye to the wants of the country.

New Jersey State Agricultural Society.—The fifth annual exhibition of this Society will be held at Elizabeth on the 2d, 3d, 4th, and 5th of October next. The Prize List is now ready for distribution. Jerseymen ought to give the managers a generous support.

Brooklyn Horticultural Society.—The June exhibition of this Society will open at the Athenæum on the 13th, we believe, of the month. Active preparations are being made for a large show, which we hope may be entirely successful.

Poughkeepsie Horticultural Society.—There is an active Society at this place, which holds frequent meetings for the discussion of horticultural subjects, and seems thereby to be doing much good. We had their proceedings, but they were mislaid. We should be glad to have them again.

St. Anthony's Falls (Minnesota) Horticultural Society.—Another Horticultural Society was organized in this far-distant State on the 26th of March, 1860. It is a good movement in the right direction, and has our best wishes. The constitution adopted was very brief, and substantially the same as that adopted recently by the St. Paul Society. The following officers were elected: *President*, A. E. Ames; *Vice-President*, B. O. Cutter; *Secretary*, C. L. Anderson; *Cor. Secretary*, J. G. Williams; *Treasurer*, R. W. Cummings. The following standing committees were then appointed: *Flowers*, A. E. Ames, Miss Kimball, Mrs. Atwater. D. S B. Johnston, Mrs. Sarah H. Williams, Mrs. L. Bostwick, and Mrs. W. D. Garland. *Fruits*, A. D. Foster, D. Morrison, Capt. Rolina, D. M. Coolhaugh, Dr. Chute, D. Hurlbut, and R. J. Mendenhall. *Vegetables*, C. Hoag, Capt. Tapper, G. Reichard, R. P. Russell, S. Barnes, Edward Murphy, and Wyman Elliot. A resolution was passed, "That all editors using their papers to advance the interests of this Society, and who wish it, may become members free of expense." The Secretary informs us that, "After visiting and admiring the beautiful and well-arranged greenhouse of Dr. Ames, where a great variety of rare and costly flowers were in bloom, the Society adjourned, to meet at the same place on Wednesday, April 4th, at 2 o'clock P. M. All persons wishing to become members can either be present or send in their names. Ladies may become members, and they are respectfully solicited to coöperate with the Society. It is expected that the persons appointed on the Committees of Flowers, Fruits, and Vegetables will gather all the information within their reach, pertaining to their different departments, and report at as early a day as possible to the Society. Steps will be taken to publish everything of interest." The meetings of the Society will be held on the first Wednesday of each month.

St. Paul Horticultural Society.—This Society has made some alterations in its Constitution, having adopted substantially that of the Cincinnati Society. They have also made some alterations in their list of officers, which are now as follows: *President*, Alex. Buchanan. *Vice Presidents*, Alex. Ramsey, D. A. Robertson, and Henry Acker. *Recording Secretary*, Stephen Hewson. *Corresponding Secretary*, L. M. Ford. *Treasurer*, J. W. McClung. *Librarian*, E. De Mortimer. *Executive Committee*, D. C. Greenleaf, J. W. Selby, Jno. S. Prince, Mrs. J. W. Bond, and Mrs. J. W. Selby. *On Fruits*, H. F. Masterson, Henry L. Moss, N. J. T. Dana, T. M. Newson, and John W. Nichols. *On Vegetables*, M. D. Clark, J. G. Trevor, C. H. Schurmeier, L. Harding, and Wm. Wakefield.

The Executive Committee recommended the election of a number of distinguished horticulturists as honorary members; in the list is the name of the editor of this magazine, a compliment which he will be very happy to acknowledge in suitable terms. After the transaction of some

routine business, the society adjourned to meet in April. Mr. Ford exhibited a small collection of flowers, which we hope will increase in size at each succeeding meeting.

York County (Pa.) Horticultural Society.—At the annual meeting of this Society, held May 5th, the following officers were elected for the ensuing year: *President*, E. Chapin, Esq. *Vice-President*, Samuel Small. *Secretary*, Edward J. Evans. *Treasurer*, B. H. Weiser. *Managers*, Edward Jessop, Geo. A. Heckert, Thos. Williams.

The Useful and the Ornamental: a Western Manual of Practical Rural Affairs; or How to Fence the Farm and Adorn the Home, &c. By C. Thurston Chase. Chicago, S. C. Griggs & Co., 39 & 41 Lake street.—This is No. 2 of Chase's Western Rural Hand-Books, and contains much valuable information about forming and cultivating hedges, ornamental trees, shrubbery, &c. A hand-book like this is just the thing for the West.

CATALOGUES, &c., RECEIVED.

Catalogue of Dahlias and Bedding Plants, for spring of 1860—John Wilson, Nurseryman and Florist, Albany Nursery, Albany, N. Y.—Embraces a choice collection of Dahlias, Fuchsias, Verbenas, Phloxes, &c.

First Annual Report of the Proceedings of the Fruit-Growers' Society of Eastern Pennsylvania.—This report contains much valuable information, and we are glad to see it preserved in permanent form.

Periodical Catalogue of Fruit and Ornamental Trees and Plants, cultivated at the Highland Nurseries, Newburgh, near New York. By A. Saul, successor to the late A. J. Downing & Co. —A reliable, well-printed catalogue.

Bliss's Seed Catalogue, containing a choice collection of Flower, Vegetable, and Agricultural Seeds, comprising splendid assortments of German Asters, Stocks, Balsams, Zinnias, Carnations, Hollyhocks, &c., besides all other established favorites, and many new and rare seeds. Benjamin K. Bliss, Springfield, Mass.—A very extensive and choice collection, embracing all the most recent novelties.

A Descriptive Catalogue of a choice collection of Dahlias, Verbenas, Petunias, Phloxes, Carnation and Piccotee Pinks, Chrysanthemums, Bedding Geraniums, and sundry other plants. B. K. Bliss, Springfield, Mass.—Full of novelties and choice things.

Rose Lawn Nurseries, Tickfaw, La. H. A. Swasey, proprietor.—A circular setting forth the advantages of these new nurseries.

Catalogue of Trees and Plants cultivated and for sale by John W. Adams, Portland, Maine.—A short title, covering a fine collection of plants, with several good illustrations. We should like to see illustrated catalogues more common.

The Water Cure Monthly: a Magazine for Hydropathy, Physiology, and Hygiene. James E. Gross, M. D., editor. Glen Forest Water Cure: Drs. Gross and Seeley, publishers, Yellow Springs, Ohio.

The Prince Edward Island Calendar for the Year of our Lord, 1860. Charlottetown: Printed, published, and sold by George M. Haszard, south side Queen Square.

To the Vine-Growers of the United States.—The following circular has been sent to us, with a request that we would give a synopsis of it. The subject is a very important one,

and we hope will meet with the attention it deserves, especially from those directly interested in it. We have no doubt the Convention will be instrumental of much good:

At a late meeting of the "Aiken Horticultural and Vine-Growing Association," it was resolved, That a committee of five be appointed to open a correspondence with the various Vine-Growing Associations in the United States, and to ascertain the practicability of holding a Vine-Growing Convention in Aiken some time next summer; and if found practicable and expedient, that the committee take such measures to secure this object as they may think proper, and that they report the result of their proceedings to this Society at its meeting in May next.

The following gentlemen were appointed the committee: Messrs. A. De Caradeuc, Chairman; McDonald, Ravenel, Redmond, and Wood.

It is perhaps proper to state the object of the Association in proposing such a Convention, and to point out a few of the advantages to be derived from it. In the first place, it is necessary to come to some understanding about the names of the grapes now under cultivation, as it is evident that great confusion exists in that respect, most of the vines being known in different places by different names: the Black July, for instance, having five synonyms. Thus it often happens that a vine-grower reads or hears great praises of a grape whose name is unknown to him, and a description of which tallies with none that he has; he procures it at great expense, cultivates it with care for two or three years, and ultimately discovers it is identical with some other he has had a long time. This is discouraging, and has deterred many from procuring new and valuable varieties, which it would have been advantageous to have cultivated more or less extensively. This difficulty can only be obviated by a Convention such as is proposed, the best written description never being so lucid as to convey an exact idea of a fruit.

The meeting will take place at a season when the fruit at the South is ripe; all who attend are invited and requested to bring samples of their grapes, ripe if possible, and green if otherwise, with a leaf and a piece of the wood, and names and synonyms attached. Those who can not attend are requested to forward samples as above. Thus if we are assisted by the good will of a majority of vine-growers, most of the varieties in the States will be represented; their qualities, names, synonyms, sizes, degrees of maturity, etc., will be compared, and a vast amount of invaluable information derived. Names will be agreed upon, accepted, or rejected, with good authority. Persons will also be requested to bring or send samples of the wild grapes from their neighborhood in the same manner, that the different species might be finally determined upon, and each grape properly classed under its own head or type—an object of great importance to the botany of the country, and perhaps finally to the making of wine from them. We are daily getting additions to our list of natives, and unless a correct nomenclature and classification be at once made, we will be thrown into inextricable confusion, expensive and troublesome to the growers. Another object of the Convention is, to determine upon some manner of naming the different wines. The present way of calling them by the name of the grape is in direct contravention to the established rules of wine-growing countries. It has always been customary to classify wines by the name of a State, province, or district, with the different brands attached to them, according to the name of the particular locality. Thus the general name, "wines of the Rhine," comprises many particular brands, such as Hockheimer, Johannesberg, etc., etc. Bordeaux wines include Chateaux Margaux, St. Julien, La Rose, etc. The reason for this is very obvious: the same grape will make totally different wines in different places. And, again, in most wine countries (and we will no doubt adopt the same course) the grapes are mixed. A wine made from a mixture of Catawba, Isabella, and Warren could not be called by either of those names.

At present we have a hundred different Catawba wines, no two of them alike; hence the propriety of rejecting the name of the fruit in favor of the time-honored custom of naming after the state, district, or river, with brands of private names or localities. Purchasers will then know at once what they are buying, and will not be prejudiced against Catawba or Warren wine, because they have tasted worthless Catawba or Warren wine.

Independently of the foregoing, the amount of information exchanged by persons meeting in such a Convention as we propose, would truly be worth "millions to the nation," and would tend more to develop that rich culture than all that could be written.

We call, then, upon all who cultivate the grape, whether for the table or for wine, or who take an interest in the success of its culture, to assist the committee in securing their object—a convention of delegates from all the Vine-Growing Associations in the United States, and of private and separate vine-growers. Let all who can come determine at once to meet at Aiken, S. C., on the *third Tuesday in August next* (21st), there to assist in the good work—to compare their fruit and exchange their views.

Aiken has been selected as being easy of access from all quarters—North, South, East, and West—being at all times unexceptionable as to health, and a delightful summer resort for the neighboring cities, and well provided with ample accommodations.

Secretaries of the different associations connected with the vine-culture, would confer a favor by forwarding to this office, or to either of the gentlemen of the committee, the names and localities of their Societies, and all other information they may think proper.

A. DE CARADEUC, Chairman, Woodward, S. C.
Dr. J. C. W. MCDONNALD, " "
H. W. RAVENEL, Aiken, S. C.
E. J. C. WOOD, " "
February, 1860. D. REDMOND, Augusta, Ga.

Correspondence.

EDITOR OF THE HORTICULTURIST:—In each number of your instructive journal I observe you are much troubled by novices for information as to the culture of fruits, and seem to take it all patiently; so much so that I am encouraged to be "*E pluribus unum.*"

Having, in the last two years, planted out a few hundred each of apple, pear, and peach, in mode "according to the books," which was to me as the Greek grammar is to the urchin, I find myself, as him, compelled occasionally to "go up" to the school-master to "ask a question."

Ain't it stupid to sidle up and say, "Mr. Ichabod! what's the definition of 'heading back,' 'cutting back,' 'shortening in,' 'training low,' and—and—a—and '*pruning*?'"

Now to the last query, may-be, I might venture to say, it *means* cutting off sprouts, defective limbs and branches, and cutting out some when there are too many. Go up head, sir! or *stay* foot! which is it? As to the others, I give it up—if I *never* get playtime.

Heading back, cutting back, shortening in, training low. Jingo! what stumpers, *when lumped;* one at a time, never hearing of the other terms, a green might understand. Do, Mr. Horticulturist, in the name of all, say precisely, succinctly, distinctly, and seriatim, what is the plain English of each of these, to me, vexed terms.

One person—vide 88th page of February number of HORTICULTURIST—says, "Prune so as to leave no *lower* limbs, no branches." What! leave no lower branches, and yet leave *any?* Indade, indade, sir, ould Ireland is among you.

Seriously, Mr. Editor, please give me your rendering of all these terms, and when and how you do each. Because, as some of my trees are three years old, some only one, and wanting the knife, (being as yet innocent thereof,) I must hurry about it, I suppose.

Figs grow very well in this latitude as standards, with a light covering of straw in winter; can you recommend a variety? and say how long before they will bear after planting. We have a fine climate and soil for fruits, and yet have precious little, though the subject is more

in our minds than heretofore. The sentiment—and a false one it is—prevails with us. that it is a *small* business; and besides, though beloved of many of you North men, the darkie conscientiously reasons that anything like fruit is as much his as his master's, just as he does his mistress's eggs, if the hens are foolish enough to lay outside of the hen-house.

A truce to my effusions. and believe me, Mr. Editor, Respectfully yours,

Kelson Co., Va. J. J. M.

[We owe J. J. M. an apology for not having promptly answered his quæries; but his letter, with several others, disappeared from our "Table," and we have only just now recovered it. The terms he alludes to are generally used with great looseness. We will try to explain them briefly. "Heading in" and "heading back" are synonymous terms; so, also, "cutting back" and "shortening in" generally mean one and the same thing, though not always. Properly, "heading in" is a generic term, relating to the whole tree or plant; as, to "head in" a tree is to cut off a portion of all the branches; "heading in" is most usually done when trees are transplanted. "Shortening" is a specific term, relating to one or more branches; as, to "shorten" a branch or limb is to cut off more or less of it: this is done in spring and fall. The term "pruning" will cover all these operations. In pruning we have several objects in view, some of which you have mentioned, and may "go up head;" but primarily we "prune" to give shape or form to a tree or plant, or to induce and promote fruitfulness; and to accomplish these two general purposes, we often prune at different seasons of the year. For the first, pruning may be done in the fall or early in spring; for the latter, we prefer, generally, the month of June; but where trees have been well cared for, "pinching" alone is sufficient. "Pinching" or "pinching in" is another term in common use not alluded to by J. J. M. This operation consists in taking off the end of a shoot with the thumb nail and forefinger, and is always performed during the growing season, while the branches are young and tender. Its object is to check the growth of the branch, and promote the formation of fruit buds. To make all these operations perfectly plain would require a number of engravings, which we may by-and-by get up. To "prune so as to leave no lower branches" is an operation analogous to cutting off a dog's tail close behind the ears. We now hope we have succeeded in giving our correspondent a general idea of the proper meaning of the terms above mentioned, and he may therefore "go out to play;" we wish we could have a good time with him. In regard to Figs, we would recommend the Brown Turkey and Black Ischia; you ought to get some fruit the second year. It is a false sentiment to consider fruit-growing a "small business" anywhere where fruit will grow, and we are getting "bravely over it" here.—ED.]

MR. EDITOR:—In your February number I find the American Persimmon called the "American Medlar." I have always regarded the medlar as a species of malus, and, like other trees of that genus, as hermaphrodite. How any one can regard the persimmon as even distinctly related to any of the apple family is difficult to conceive. The persimmon is certainly dicœcious, and the arrangement of the seeds is different from any fruit I have seen, except the date. Will not you or some of your correspondents give us information respecting the botanical character and relations of both of the above-named fruits? Having received from a nurseryman of your State several peaches, named in the bill and on the label, "Excelsior," I was surprised, when they put forth leaves, to find a part of them exhibit globose glands, and a part of them serrate leaves. Having written to him on the subject, he informs me that they are identically the same kind of peach, "one being a seedling of the other." Now I wish to be informed, through your able periodical, whether such a case was ever known as that serrated peach-trees were exactly like others with glands. GRANDÆVUS.

[Terms are frequently used with much looseness, particularly in their popular application The Persimmon and Medlar are certainly different, and yet the former has been called the American Medlar since the days of the redoubtable Captain Smith. A reason for this may

be found in the astringent qualities common to both. Another name for the Persimmon, and a more appropriate one, is the Date Plum. The Medlar belongs to Pomaceæ, the Persimmon to Ebenaceæ. Their botanical characters may be summed up thus: *Mespilus* (Medlar)—Icosandria, Digynia. Calyx 5 cleft, superior; divisions generally foliaceous, serrate; corolla 5 petalled; styles 2 to 5; drupe or berry with from 2 to 5 bony seeds. *Diospyros* (Persimmon)—Dicœcia, Octandria. *Staminate Flower:* calyx 4 to 6 cleft, dilated; corolla pitcher form, 4 to 6 cleft; stamens 8, 16, or 24; often 2 anthers on a filament. *Pistillate flower:* calyx and corolla like the staminate; stigmas 4 or 5; berry 8 to 12-seeded. Varieties are sometimes met with which are seedless. Your peaches, of course, are not identical, and no such case as you mention has ever been known.—ED.]

MR. EDITOR:—I have been looking over the back vols. of the HORTICULTURIST, of which I am the fortunate possessor of a complete set, where I find almost everything I want information upon except the cultivation of Sage. Will not some of your correspondents, having experience with the plant, give your readers the best mode of culture, also the after-care and preparing for market, as I think it would be a remunerative crop in Ohio. Mr. Chorlton, in some of the back vols., gave us some excellent articles upon the cultivation of several kinds of vegetables; perhaps he might equally as well interest your readers with an article upon the cultivation of sage. By-the-by, all who have not already obtained, should avail themselves of your proposal to furnish bound vols. from 1855 to 1859, inclusive, at the low price of ten dollars; they are cheap, worth double the money. WM. HERDMAN.

Eaton, O., May 4, 1860.

[We hope Mr. Chorlton, or some other correspondent, will respond to the above in a more elaborate manner than we can indulge in at this moment. Sage is propagated by seeds and cuttings. The seeds should be sown in spring, in drills, about a quarter of an inch deep, in a carefully prepared border, and the plants, after having taken on a few leaves, transplanted into beds. The soil should be warm, well pulverized, and enriched pretty liberally with old manure. Set the plants two feet apart in rows, and the rows three feet apart; but if not hoed by hand, four feet will be necessary. The beds must be kept free from weeds by an occasional hoeing. Cuttings may be prepared in March, or before the plants have begun to grow; they may be from four to six inches long, and should be cut square off close beneath an eye or bud. Put them in a shady border, about three inches deep, and water occasionally when dry. After they have become well rooted, they may be transplanted as directed for seedlings; but it would be better not to transplant until fall. Cuttings may also be made in the fall, but not so well. Sage may likewise be propagated by dividing the old plants, and by suckers. In the fall or early in spring all the plants should be nicely trimmed or cut in. The best time to gather the leaves is just before the flowers have expanded, and this should be done when the weather is clear. The leaves should be spread out on a floor or on sheets to dry, and may afterwards be pulverized or not. The sage is a perennial, and the beds may be kept in good condition for cutting for several years.—ED.]

"Is there any plan by which a small greenhouse can be heated from the chimney of a dwelling, by means of pipes running back of the grate?"—[We know of no means by which a small greenhouse can be heated in a satisfactory manner in the way you propose. It might be done by means of a water back, but this you would find more expensive and troublesome than an independent heating arrangement. If the house is a permanent one, we would advise you to put in a small boiler and pipes, as being the best, and in the end the cheapest.—ED.]

MR. EDITOR:—I notice in your May number an article giving the writer's opinion of the requirements and efficiency of Boilers, with your promise of several other articles on the same subject. Please suggest to those correspondents who are willing to favor us with their expe-

rience in the matter, the importance of giving facts and figures, to enable us to compare their doings with our own. Let them give the size and height of the house warmed, number of feet and size of pipe, diameter or area of the fire-grate, the quantity of coal consumed in a given time, with the average temperature within and without the building during the same time. Such information (with your knowledge of the writer as an assurance of its reliability) would be of great benefit to your readers, and to practical men, worth a book filled with opinions.

Dutchess County, May 16, 1860. Yours truly, A READER.

["A Reader's" suggestion is to the point; by all means let us have the "facts and figures." We find a couple of articles on hand deficient in these particulars, and shall return them for amendment.—ED.]

MR. EDITOR:—Dear Sir, I give to you my experience in raising grapes in the way Mr. Bizzell, of Clinton, N. C., recommends. Eight years ago this summer I tried the experiment of pruning the Isabella, shortening in after three or four bunches had formed; the result was a new crop, as stated by Mr. B.; the first rotted, the second did not rot, but ripened, but of a lighter color than the first crop has been since (as before that I had not had any to get ripe). I gathered the second crop on the day of the Presidential election eight years since this coming fall; the grapes were too sour for any use, at least to eat, and I am satisfied nothing can be gained by the discovery. I see another article that I would refer to, recommending the persimmon as stocks for peach-trees. I have tried that; it will not do, and your readers can save time by not trying it; no good would result from it if it would answer, for the reason that the root of the persimmon goes too straight down in the ground, making it hard to get up, and not likely to live after being removed. Yours, HUGH MCLEAN.

Beries Creek, Harnet Co., N. C.

I did not understand the pruning of the Scuppernong as Mr. B. did, but simply that the vines would bear pruning, (which up to that time had not been agreed to by cultivators of that fine grape,) and without pruning it could not be got on an arbor. It requires but little pruning, but will bear it as well as other vines after the leaves have grown to full size; earlier it will bleed or run, and after the leaf falls will do the same. H. MCL.

[The above contains additional testimony in regard to Mr. Bizzell's mode of pruning vines, and it would seem to be little in favor of its out-door application, even at the South. We should like, however, to hear from others who have tried it. Of course the persimmon will not do for stock for the peach; we so stated quite distinctly, though in a playful manner.—ED.]

MR. EDITOR:—I was rather astonished to see Belle de Choisy set down as a poor bearer in your last number. With me it bears prodigious crops, beating, in this respect, the May Duke, which is notorious as a bearer. I am convinced that locality has a great deal to do with the success or failure of varieties. For instance, the Seckel is set down as a poor grower on the quince in many places; with me it grows remarkably well both on quince and pear, making on the former stock a growth of 2 to 4 feet a season, and a most unexceptionable form. We have lost our peach crop in this vicinity entirely this year, the buds being winter-killed; but the apple and pear promise very large crops, and are now just setting. A pear orchard planted in 1853, has a number of fruit set on Bartlett, Lawrence, Dearborn's Seedling, D'Angoulême, Easter Beurré, Seckel, (few,) Bloodgood, Washington, Belle Lucrative, Flemish Beauty, and Vicar of Winkfield. "He that plants pears plants for his heirs," but if I live till fall I shall reap specimens of the above varieties from standards, in addition to a peck of luscious Bartletts from eight trees, gathered last year. Yours truly,

Pikesville, Baltimore Co., Md., May 9, 1860. J. T. COUNCILMAN.

[The Belle de Choisy is undoubtedly, in general, a poor bearer; but it is gratifying to know that in some localities it yields a generous crop, for it is really a fine fruit. Our readers would

be doing the pomological world a good service by sending us information like the above, since it would go far to settle many mooted points. Let each make a record of the particular kinds of fruits which uniformly succeed well, being careful to admit none to this distinction that do not clearly come within its terms.—ED.]

WHAT PEACH-TREES SHALL WE PLANT?—MR. EDITOR:—Here in the Great West—on the banks of the Upper Mississippi—I am happy to say, the subject of Fruit-Culture is yearly meeting with more attention. The fact is beginning to be made manifest, that the growing of fine fruits for market is about as *paying* a business as one can be engaged in. And the further great fact is daily becoming better understood by the masses, that the fruit orchard or the fruit garden can be made to contribute very largely to the "good living" of a family. Few people heretofore seem to have been aware of that important truth. They have regarded pears and fine berries, and even apples and peaches, as mere luxuries, to be partaken of but seldom, and only to gratify the appetite, and not as articles of food to be had daily, with a little effort, in the greatest profusion, from January to December. There is a work of regeneration going on in the land in this matter. Every fruit-grower who loves his calling—every member of a Horticultural Society—should consider himself a missionary in the cause, and labor to bring about the great end. And we ought all to desire the success of the HORTICULTURIST, as one of the most efficient agents in the work. But I am wandering from my proposed subject. I come back to the question standing as the caption of this article.

A few days since, at a meeting of a Horticultural Society, the question was asked me, "If you were planting one thousand peach-trees, what proportion of them should be seedlings?" I answered somewhat hastily, "I should want eight or nine hundred of them to be such, and the remainder of the hardiest improved sorts." The object of this communication is to repeat the question to you and your readers, and to inquire how nearly was I right.

I believe it is a conceded fact that seedlings, as a general thing, are not only more hardy, but are surer bearers. This is the prevailing opinion in this region; and I state it in order to obtain the views of cultivators in other sections of the country. So far as my observation extended, during the recent winters that were so disastrous to fruit-trees, the finer varieties of the peach were the first to suffer. How far this is true, as a general fact, I am unable to say. So, in regard to their bearing qualities: seedlings are more certain bearers, and are less liable to have their fruit-buds killed by extreme changes in winter or nipping frosts in the spring.

If these be facts, then, ought we not to plant largely of seedlings, rather than of the budded varieties? I would not plant seedlings indiscriminately. Some of them—more particularly of the yellow sorts—are noted for coming true to the parent kind; and should we not do all in our power to test that quality in the peach, and, if possible, develop and improve it? Some are said to possess it in an eminent degree. We have in this region a very fine yellow sort, known as *Fell's Rareripe*,—a seedling of twenty years ago from Massachusetts, which is uniformly propagated from the seed. We have also some others, but which have not been sufficiently proven to enable me to speak confidently of their merits. Some of them are nearly, if not quite, equal to the best of the cultivated varieties.

The subject seems to be one of great importance, and worthy of more attention than it is receiving at the hands of nurserymen and others. T. G.

Hamilton, Ill.

[We are glad of this additional testimony that fruit-culture is growing more and more in favor at the West. It is an entirely mistaken notion to regard fruit as a luxury for the rich; it is, in truth, an article of food, and so ought to be common to all. If every fruit-grower, and every member of our Horticultural Societies, would regard himself, and act, as a "missionary," this happy condition would soon be brought about. In regard to Seedling Peaches, we should hardly venture to plant the large proportion our correspondent names, even though we knew

the pits had been carefully selected from the best kinds. It is true that the Peach more nearly reproduces itself from the pit than other fruits; but it is also true that the peculiar diseases to which the peach is subject are perpetuated by the pit as well as by the bud. On the whole, we should prefer to plant the largest proportion of well-known and reliable old kinds, and trust only to such seedlings as we knew to be from vigorous and healthy trees of approved varieties. Taking all things into consideration, we believe the chances of getting peach-trees free from disease are pretty equally divided between seedlings and budded stock. The utmost care is needed in both cases, to secure healthy stocks and healthy buds. We hope some of our old peach-growers will give us their views on this point.—ED.]

Editor's Drawer.

THE WINTER IN ENGLAND.—The past winter has been one of great severity in England. "Somerset," in *Turner's Florist*, thus describes its effect: This, the most memorable season which has occurred for many years, has in many places thinned out the survivors of former years, and what have been only partially killed by the frosts of winter, are likely to die outright through the influence of the bitter, parching wind now prevailing; and which, blowing from the north-east, seems to wither up vegetation as it passes over it, worse, if possible, than the frosts of winter. We are witnesses of the effects of this piercing blast daily on tender-foliaged plants, and sub-hardy Coniferæ. With us Pinus apulcensis, patula, and Montezumæ are dead, or nearly so; P. ayacahuite, Lindleyana, Persica, and halepensis, much injured; Cupressus Goveniana and thurifera, browned, but not dead; C. funebris, dead (this plant is not worth a further trial); Pinus insignis, uninjured, and Pseudo-strobus ditto. I name these, as in some places they are considered tender. We have long since given up all the long-leaved kinds of Pinus, as too tender for our climate, excepting Hartwegii, which is safe here, at which I am surprised, as it is generally reported tender. All the rest, including P. Bungeana, A. Cephalonica, Webbiana, and Brunoniana, are safe; the latter only very slightly injured. Cephalonica is as hardy as Pinsapo, when it gets up a few feet in height; Webbiana is injured only by spring frosts (the cold of winter does not seem to affect it while dormant, but when the young growth commences it is tender as a cucumber); Bays and Laurestinus browned in exposed places; hybrid Rhododendrons in many places killed down to the ground, particularly the scarlet crosses; strange to say, many of the Sikkim varieties are perfectly hardy, standing untouched by the side of hybrids from garden varieties quite dead. Garrya elliptica dead in places; the said to be hardy Chusan Palm quite dead, which is a loss, as it was likely to be largely introduced into garden scenery; the gold-blotched Coltsfoot from the same country (China), killed to the ground, but where a little litter was placed over the crowns of the roots they are alive; the Euonymus and Arbutus injured only in exposed places. Lardizabala triternata, against a wall, alive. We have only a kind of purple Broccoli left, and the hard white dwarf Russian. All other vegetables, except Borecoles, were destroyed.

THE SCARLET-FRUITED AUBERGINE.—The Aubergine, or mad apple with scarlet fruit (*Solanum Pseudo-Melongena* of Tenore), has been introduced into France by M. Louesse, one of our most distinguished horticulturists, who received the seeds of it from Portugal some years ago. The first, being probably not ripe enough, did not grow; a second package gave better results. This plant is an annual; its stalk, straight and green, attaining the height of a metre and more; the alternate leaves, supported by a petiole, are many-lobed, with nerves strongly pro-

jecting on the lower surface, as rough to the touch as those of some Verbascum; they are, towards the middle of the plant, about 0.15 metres long, 0.22 wide. The flowers have nothing very remarkable, but it is not so with the fruit, which acquires, by degrees, nearly the size of a hen's egg; it is pendent, two or three together, in consequence of the bifurcation of the stalks; its form is oval and flat; the two transverse diameters are from 0.05 metres to 0.06 metres. The length is 0.07 metres; there are observed some deep, longitudinal, parallel furrows, placed with some regularity on the two flat surfaces, generally with three on each. Its color is a fine tint of aurora, or more often brilliant red scarlet. Tenore said that they are more or less mingled with green, but we have not observed this latter color. The interior consists of two irregular cells, containing numerous kidney-shaped seeds. It ripens at the beginning of autumn.

The culture of this plant is almost that of others of the same nature; it requires much heat, a rich and well-manured soil, and abundant watering. The seed is sown on a bed, at the end of March or beginning of April, and replanted in beds. M. Louesse advises nipping the end of the shoots, and cutting off a certain number of useless branches; thus favoring the development of the fruit. It is very probable this plant could be cultivated in pots, as the *Solanum ovigerum*. The *Solanum Gilo* of Raddi, regarded at first by Lenore as a distinct species, is only a simple variety of the one of which we are speaking; it is distinguished from it, upon the authority of Tenore, by the color of the fruit, and likewise by its sour and sharp taste, while the fruit of the Solanum Pseudo-melongena is insipid. Dunal informs us, however, that this fruit is esteemed, and the plant cultivated in all the Spanish and Brazilian provinces bordering on the tropics. It must here necessarily acknowledge the influence of the climate. Under that of Paris, there is no reason to suppose that the fruit acquires the proper qualities to be eatable, and the scarlet Aubergine remains simply an ornamental plant, which one could associate with or substitute for the egg-plant (*Solanum ovigerum* of Dunal). M. Louesse has observed that the vulgar name of Aubergine, Tomate, is false, and relates more probably to the *Solanum Texanium*, a neighboring species, the fruit of which is flat and projecting at the sides, and the stalk deep violet, and full of thorns.—ARISTIDE DUPINS, in *Revue Horticole.*

THE SUGAR CANTALOUPE.—Facility of cultivation, abundant production, and, above all, a most agreeable flavor, assign to the Cantaloupes the first rank among all the races of Melons. The markets—those of Paris, at least—have nothing superior; and in the establishment of the rich amateur, with the epicure who is proud of assembling in his kitchen garden the best varieties of this delicious fruit, the Cantaloupes always form a species of basis or staple, that which is cultivated on the largest scale; the others, so to speak, are only accessories. From the well-merited predilection of which it is the object, it does not, however, follow, that the Cantaloupe of any variety is a fruit of unexceptionable quality in every respect; it presents, on the contrary, certain deficiencies, for which, it is surprising to know, no remedy has been sought for a long time past. Thus, without speaking of its variable quality—which often requires that several fruit shall be cut in order to find one really good—it must be acknowledged, as a serious fault, that the rind is so thick that it is rare to find the flesh equal to half the weight of the fruit; there is therefore a considerable loss, which ought, if possible, to be avoided.

An agriculturist of the District of Château-Renard (Loiret), M. Bailly, turning to account the extreme facility with which the Melons may be artificially fecundated among themselves, has produced, by the aid of the Prescott Cantaloupe and of the Sugar Melon of Tours, a mixed race, which, from its double origin, he has named *Sugar Cantaloupe.* This variety shows itself exempt from the defects noted in the previous paragraph, and for several years has always reproduced itself with such uniformity that it may now be considered as perfectly fixed. Its exterior characteristics are precisely those of a Cantaloupe. Its form is a spheroid, slightly flattened, with sides somewhat ridged, entirely free from the scales or tubercles found on several races of Cantaloupes; the rind is quite smooth, of a pale green, passing to straw yellow at

maturity; the flesh, of a deep orange, equals in bulk or in weight more than three-quarters of the fruit; it is fragrant, melting, very sugary, and extends, without any line of separation, quite to the rind, which never exceeds 1 centimetre in thickness.

We do not hesitate to declare the Sugar Cantaloupe superior to every other Cantaloupe, and it appears to us impossible that it should not be deservedly appreciated by all those who will give it a trial.

M. Bailly has kindly sent us a paper on the cultivation of this melon in the open ground, which we reproduce textually. It contains information which it appears to us must be useful to those who are engaged in the cultivation of melons for market, and who operate on a large extent of ground.

"This variety of Melon (Sugar Cantaloupe) is not more difficult to cultivate than the other varieties of Cantaloupe. For early crops, I sow it in pots placed in a hotbed in the month of January or February. I make two pinchings, to determine the position of 4 principal branches. Afterwards I plant them out where they are to remain, on a new hotbed, covered with a frame or bell glass. Each plant should have a space of 1 square metre at least. If these are well managed they will give ripe fruit in the month of June. All pruning should be avoided, but the branches should be so trained as to take a proper direction for entirely covering the soil.

"The cultivation in the open ground is more simple, less costly, and gives a larger yield of fruit of very much better quality. It can be practised in a garden or in the field, provided the soil is of good quality. The ground should be covered with good manure to the depth of 5 or 6 centimetres; this is to be deeply and thoroughly worked in by the spade. Then make, at distances of 1 3-10 to 1 5-10 metres, holes of 30 centimetres square by 15 centimetres deep, which are to be filled with thoroughly rotted manure, and on this are set out the melon plants previously brought forward in a hotbed. The plants are set out from the beginning to the end of May. No pruning of any kind is to be practised, but the 4 or 5 principal branches are to have a suitable direction given them. From the commencement of the heats in June the earth should be covered with a coating of manure, and the plants should be watered abundantly twice a week. The only care required until the maturity of the fruit—which commences in August—is to keep the ground free from weeds, and to water during droughts. Under the influence of the summer heats, the earth becomes entirely covered with the broad leaves, hiding the fruit and sheltering it from the intensity of the sun's rays. It then grows and ripens in the shade, nourished by the sap, which, circulating through the numerous vegetable organs, does not reach the fruit until after having been properly elaborated. The melons cultivated in this manner acquire a richness and a fragrance not found in those subjected to continued mutilations for the purpose of enlarging and improving the fruit. I consider the frequent cutting of the branches a very injurious operation, and I can not do otherwise than recommend entire abstinence from it. Each melon plant, cultivated as I have just pointed out, will ripen 3 or 4 fruit, weighing about 3 kilogrammes a piece. They must be allowed to ripen under the leaves, and must not be exposed to the sun, as this burns them, hastens the maturity too rapidly, and prevents them from acquiring those good qualities which time alone can give. Notwithstanding its origin in a warm climate, the melon does not like too high a temperature, and the fruit is better in France than in Africa. This shows without doubt that the maturity is too rapid in the latter.—*From the Revue Horticole.*

Mètre=39½ ins., nearly. Centimetre=4-10 in., nearly. Kilogramme=2 1-5 lbs. avoirdupois.



Nº 1. Early Swedish.
" 2. Bourgeotte Commune.
" 3. Bigarreau Blanc.

Nº 4. Early Purple.
" 5. Monstreuse de Mezel.
" 6. Black Eagle.

TO THE HORTICULTURIST
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Flat Culture.



FOR a number of years there has been a diversity of opinion in regard to two strongly contrasted modes of culture, the one termed *flat culture*, and the other *hilling*, the distinguishing feature of the first consisting in leaving the surface of the soil level, that of the latter consisting in drawing masses of earth up to the plants in the form of hillocks or ridges, according to the mode of planting adopted. As usual, something may be said on both sides of the question. Judge Buel, we believe, was among the first to give a special direction to the system of flat culture, and since his day it has made very considerable progress among a large class of intelligent cultivators. The subject may be thought to pertain more generally to the farmer, and somewhat out of place here; but we are far from regarding it in that light; it concerns all who have a kitchen garden, however small. The kitchen garden, in our estimation, is no mean thing, to be put aside in a corner, and spoken of contemptuously; it contributes essentially to the necessities and pleasures of all, and deserves a more prominent place than it has heretofore occupied. In the garden, moreover, have been initiated most of the improved modes of culture that have added so much to the productive industry of the land. The garden is the school in which our best lessons are learned; and the principles there demonstrated, when judiciously and intelligently applied to the broad surface of the farm, give us our best results.

Culture, then, be it flat or otherwise, concerns the gardener even more than the farmer. When our attention, many years ago, was first called to the subject of flat culture, we determined to give it a fair trial by the side of the common system, noting carefully time, labor, and general results. We began with corn, then beans, next potatoes, etc., and with results so satisfactory, that we at last adopted the principle of drawing earth up to no plants, except for the purpose of blanching. After considerable experience, we do not hesitate to give "flat culture" a distinct approval. It is the system for our dry atmosphere, warm sun, and frequent droughts, as the hilling system may be the best for the moist climate and wet soils of England, especially where those soils are undrained. Both systems have their advocates, those of the hilling system preponderating; but the other is making its way slowly, but surely, and we have no doubt it will at no distant day meet with a hearty approval throughout the country. The advocates for "hilling" principally claim that it "retains moisture," "decreases the evaporation," and "strengthens" the plant, but how they do not

explain; but we question the truth of these points. It is manifest to us, and it accords with observation, that a plot of ground with a level surface kept well pulverized, will retain a more uniform degree of moisture than one broken into hills. It is precisely in a time of drought, when we are dependent upon the small amount of moisture contained in the atmosphere, that the advantages of "flat culture" make themselves manifest. The leaves of plants condense the moisture of the atmosphere, and in different modes shed it on the ground, but principally by means of the stalk. Now if we take corn, for example, which has been hilled, this moisture, so much needed, is thrown off from the plant, and very little is absorbed; in fact, these hills and ridges make good water-sheds, and, becoming baked during dry weather, lose the power of absorption. Where "flat culture" prevails the soil can always be kept open and porous, and its absorbent powers more fully retained. In regard to "decreasing the evaporation" by hilling, it is so transparent that evaporation is increased by the operation, that we leave that point without further comment for the present. It is well understood that hilling and ridging were introduced to get rid of surplus moisture. Hilling, also, it is said, "strengthens" the plant, the word being generally used in a mechanical sense; for example, it is contended that corn, when hilled, is less liable to be blown down. We know, however, that such is not the fact; and, so far as maintaining an erect position is concerned, facts are all in favor of flat culture. Paradoxical as it may seem to some, corn that has been hilled will blow down sooner than that which has not; and when both are down, that which has been grown by flat culture will soonest and more fully recover itself, because it has less resistance to overcome.

But we must now be content with stating what we conceive to be the advantages of "flat culture" as compared with "hilling," leaving details for another occasion; these advantages are principally the following: It demands less labor for a given amount of results; it admits of a more thorough cultivation of the soil; it lessens the evils of drought; it admits of the continued use of the best improved implements of culture; and, not among the least of its claims, it presupposes a thorough preparation of the soil, such as drainage where needed, deep plowing, thorough stirring of the soil, etc. Hilling, undoubtedly, has its place and its advantages, and these are chiefly found in a moist climate and a wet, heavy, undrained soil. Flat culture, we think, will prove the system for our climate, and improved modes of culture. Let it be more commonly tried, and adopted as its advantages may seem to warrant. We should be glad, too, to see it more frequently in our gardens, for those ever-recurring hills and ridges are nothing but an offence to good taste and neatness. If any shall find it not to possess the advantages claimed for it, they can fall back on the old system again. If, however, it has advantages, it is due to the progress of the age that they should be generally known.

CULTURE OF THE CINERARIA.

BY JOHN EGAN, NEW BRIGHTON, S. I.

As a winter and early spring-blooming plant, the *Cineraria* deserves special attention; for when properly treated it never fails to attract and to excite pleasure in the mind of every lover of flowers by the brilliancy of its

colors, profusion of bloom, and extensive variety, which, with the simplicity of its culture, ought to be sufficient inducement for every one possessing the means of keeping plants, to cultivate them. Many gardeners will no doubt consider anything which may be said on the culture of Cinerarias as hackneyed, but to amateurs these remarks may prove interesting.

Save seed from the most distinctly marked and best colored plants of neat habit. The best means of attaining this object is to allow the plants to remain in the greenhouse, to perfect their seed; to this end the plants should be shaded from intense sun, and the seed should be gathered in two or three days after the petals decay. The plants are then almost worthless, and may be thrown away, except some unusually fine variety, which you may wish to perpetuate; old plants, however, never make such vigorous growth as those grown anew from seed.

Sow the seed early in September, in a bed of light sandy loam, in a shady situation, and protect the plants from extreme moisture. When they attain a size so as to be easily handled, pot them off into three-inch pots in a compost of leaf mould and sand, and remove to a cold frame in a shady situation, protected from extreme heat, cold, or moisture, until the roots begin to show at the bottom of the pots, when they should be immediately repotted into six-inch pots, using a small portion of loam and decayed hotbed manure in the compost, and removed near the glass. This is one of the important things in growing Cinerarias. In about four weeks, if properly attended to, they will need their last repotting in pots of at least 10 inches diameter; compost the same as at the second repotting. As they progress they should be frequently syringed, and watered with guano in solution. If it is necessary to fumigate with tobacco, it should be applied weak, otherwise there is danger of injuring the leaves, which to preserve well is one of the chief objects. The temperature may attain to 70 degrees and be of benefit if the atmosphere is humid. In raising Cinerarias, one desirable object is to prevent them from being drawn, which will be the case if not kept near the glass, and frequently turned to keep them in proper shape. By these means you will have fine plants sufficient to sustain themselves without a number of sticks, which spoil their appearance.

[We are obliged to Mr. Egan for his sensible remarks on the Cineraria. It is just such practical articles that we most need, and we shall be glad to hear from him often.—Ed.]

NOTES ON NEW AND SELECT PLANTS.

BY DANIEL BARKER, SPRINGFIELD, MASS.

Dianthus Verschaffettii.—This remarkable and beautiful plant is now unfolding its lovely flowers for the first time, not only at this establishment, but in this country. It originated at the establishment of H. Hirschback, in Prussia, and was sent out by E. G. Henderson & Son, London, for the first time this spring. The description given by the Messrs. Henderson I fully concur in, and can not do better than give it in their own words:

"It forms a neat and compact half shrubby plant, densely branched habit of growth, from nine to twelve inches in height.

"The flowers, in their general aspect of growth, resemble a large specimen

of the florist's varieties of pinks, as grown for competition, but differ in showing a single expansion of flower lobes rather than of double petal series, and each entire blossom being from two to three inches in diameter; while the entire series of petals, instead of all combining to form a single blossom with the usual dark ray or centre, as is the case in the varieties above quoted, in the present example range themselves into a series of colored spots at the base, converging to a crimson belt or zone, and together forming a large aggregate cluster or flower-head. The arrangement of these concentric series of picturesque petal rays within one simple base or crown, forms one of the most novel and singular combinations yet known in gardens. The pure white ground color of this variety will form a desirable contrast with the warmer and higher petal tints of 'Dianthus Heddewigii' and its allied species, and will be found a valuable addition for greenhouse decoration in spring, and equally adapted for the open borders in summer."

The specimen sent for your inspection, you will not fail to observe, agrees with the above description in every particular save diameter of flower, which, being taken from a plant so recently imported, is naturally not so fine as the succeeding flowers will be.

A beautiful and life-like figure is given in the *Illustrated Bouquet*, plate 36.

Gazania Splendens.—This rare and beautiful evergreen summer bedding plant continues to unfold its lovely flowers at this establishment. This will undoubtedly become one of the most popular bedding plants ever introduced to this country. Its neat and unique habit of growth, combined with the rich colors of its numerous flowers, produces a very ornamental effect, quite unlike any plants we yet possess for bedding purposes. Not only is it well adapted for beds upon the flower garden, but for pot culture it will be found a most valuable acquisition. The description of the flower, as given by E. G. Henderson, London, I cheerfully endorse, as being truthful in every particular, viz.: "Flowers very numerous, of a golden yellow color, from three to four inches in diameter, picturesquely marked at the base of each petal with converging cloud-like spots of a rich dark brown chocolate tint upon a black base, and these are again marked with white spots upon their disc or surface.

"The union of these rich colors produces a highly ornamental effect in blossoms of such unique and gorgeous hues, which, when fully expanded, produce an effect so brilliant that the most accurate description fails to convey an adequate impression of their beauty."

A most accurate figure of the above fine plant is given in part 7 of the *Illustrated Bouquet.*

Pyrethrums, *Vars.*—New and valuable hardy herbaceous perennials. The varieties from which the enclosed flowers were taken were obtained by Mr. Bliss from the continent of Europe, and are *perfectly hardy*, having withstood the late winter without any protection; as such they will be found very valuable additions to this most useful class of plants.

The subjoined list contains the names of the latest new varieties, and the best in cultivation:

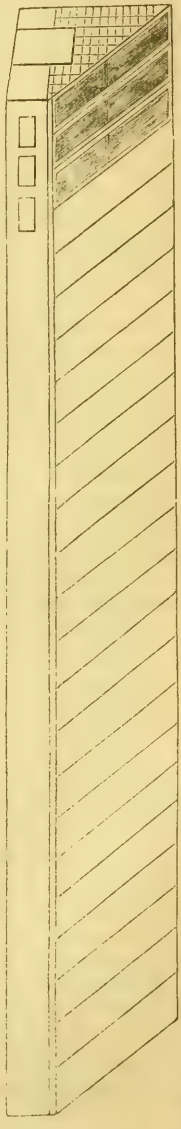
Duchesse de Brabant—Rich rosy crimson, bright yellow centre.
Delhayi—Rich reddish crimson, yellow centre.
Milleri—Purplish rose.
Roseum Nanum—White, tinted with bluish pink, orange yellow centre.
Parthenium, Flore Pleno—Fine double white.

[The flowers were received in good condition. The Pink answers to the description, and is beautiful. The Pyrethrums are large and showy, and being proved hardy, will be an acquisition to the flower border. Mr. Barker's notes on new and select plants constitute a valuable feature in our magazine, and will be continued.—Ed.]

ORCHARD HOUSE OF J. S. LOVERING.

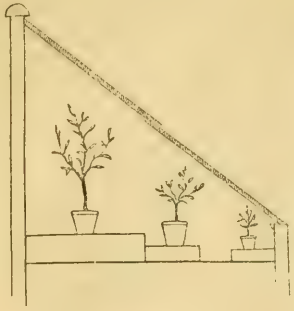
BY DR. GEO. PEPPER NORRIS, WILMINGTON, DEL.

Mr. Lovering's Orchard House is 165 feet long by 14 wide, is a lean-to, points south, under shelter of a hill. Back wall 12 feet high, 8 feet stone work ; on top of wall 4 feet of wood, in which the back row of ventilators (2 feet by 20 inches) works, hung on rollers, and all opened and closed simultaneously by means of a wire resembling a front door pull. Front wall 4 feet high, made by nailing plowed and grooved planks to locust posts, in which are cut the front ventilators, 4 feet 8 inches long by 18 inches deep, and covered by a screen of gauze wire with board shutters to close tight. The roof is made of 16 feet rafters, on which rests 8 foot sash, immovable; the glass is first quality, 18 by 10, (the Rivers-Saunders system of roofing would not only be cheaper, but present a better appearance, but was not in vogue when this house was built ;) a single row of supports on one side of the wall completes the roof. The interior is divided into three borders : the front border (3 feet 6 inches wide) is raised 9 inches above the walk (which is 2 feet 6 inches wide); the first back border is 3 feet wide, and raised 16 inches above the walk ; the second back border is raised 1 foot above the front one, and is 4 feet wide. On this further back border are placed the largest trees only, having the most head room—the smallest pots standing on the front. The appearance of the house, when seen by the writer on the 7th of April, 1860, was truly magnificent, being one dense mass of bloom, (except some of the early kinds, on which the fruit was already set,) resembling a greenhouse of Azaleas in full flower. Peaches, apricots, nectarines, plums, and figs are embraced in the assortment, and are grown principally in 11-inch pots placed about three feet apart, every leaf being fully exposed to the sunlight—vines being, of course, entirely prohibited.

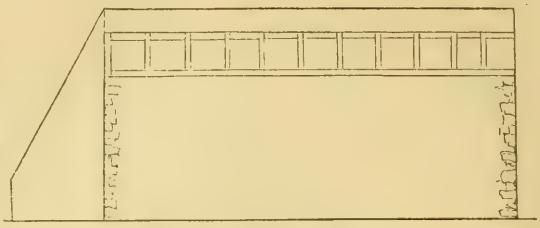


MR. LOVERING'S ORCHARD HOUSE.

Of the success of this mode of culture in America, no one who has witnessed Mr. Lovering's house can have the shadow of a doubt. With him it is no new experiment, having fruited pot trees in his cold graperies for several years. The rough cost of the house, Mr. Lovering informed us, was about $1000, but we



END VIEW.



BACK VIEW OF ORCHARD HOUSE.



FRONT VENTILATOR.



BACK VENTILATOR.

judge that a house of similar dimensions, with the Rivers roof and inferior glass, could be constructed for less than half that sum. The mode of culture, together with a description of the varieties found to succeed best, pruning, potting, etc., is reserved for a future article.

[The above is from a work in press by our well-known correspondent, Dr. Norris, and was sent us in response to a request for information on the subject of Orchard Houses, a knowledge of which is now so eagerly sought for. The work is entitled, "Fruit Trees in Pots, their Culture and Management adapted to the Climate of America," and Dr. Norris's practical mind will no doubt make it one of peculiar value.—Ed.]

FLORICULTURE.

BY C. N. B.

The cultivation of flowers is an employment adapted to every grade, the high, the low, the rich, and the poor; but especially to those who have retired from the busy scenes of active life. Man was never made to rust out in idleness. A degree of exercise is as necessary for the preservation of health, both of body and mind, as food. And what exercise is more fit for him who is in the decline of life, than that of superintending a well-ordered garden? What more enlivens the sinking mind? What more invigorates the feeble frame? What is more conducive to a long life?

Floriculture is one of the most innocent, the most healthy, and, to some, the most pleasant, employments in life. The rural scenes which it affords are instructive lessons, tending to moral and social virtue, teaching us to "look through nature up to nature's God."

The cultivation of flowers is an appropriate amusement for young ladies. It teaches neatness, cultivates a correct taste, and furnishes the mind with

many correct ideas. The delicate form and features, the mildness and sympathy of disposition, render them fit subjects to raise those transcendent beauties of nature, which declare the perfections of the "Creator's power." The splendid lustre and variegated hues (which bid defiance to the pencil) of the rose, the lily, the tulip, and a thousand others, harmonize with the fair fostering hand that tends them—with the heart susceptible to the noblest impressions—and with spotless innocence.

We know of no association more constantly present to the mind, or one more fitting, than that which connects woman with flowers ; and rarely, indeed, does the first appear more charming, or engaged in an occupation more suited to her taste, than when she is surrounded by the latter, by blossoms that have been trained and cherished by her own fair hand. We have always admired flowers as the most beautiful productions of nature. True, they are fleeting, but what is there of the beautiful and lovely which is not? It may be sympathy, it may be mere imagination, but to us the thought has the force of truth, that we have never known a woman truly pure-hearted and angel-minded that did not love flowers. The things by which we are surrounded have their influence on our minds; they give the tone and coloring in a measure to our character, and perhaps our destiny.

A taste for the pleasures and comforts of horticulture in a country has been justly considered as an indication of refinement in the people, and its excellent moral effect has been acknowledged in every instance where it has taken place.

Who does not love flowers ? They are such pure and beautiful things, such sweet gifts from our Heavenly Father, scattered with lavish hand to gladden the hearts of his creatures ! Not for the wealthy alone do they bloom, but the lowliest cottager may claim them as his own, to beautify his humble home. We never passed a cottage overhung with vines, where roses and honeysuckles mingled, and morning-glories peeped in at the windows, without thinking that there must be, in that lovely abode, hearts full of love—love for the beautiful, and love for God.

Why is it that the home of the English cottager exhibits a degree of neatness and comfort so seldom seen in this country? It is because honeysuckles and jasmines are trained around the doors and windows; because flowers of many kinds and beautiful hues are mingled with shrubbery in the limited yard. Would that such a taste were more prevalent in this country ! Where so much real pleasure can be purchased at so cheap a rate, so many senses be gratified at once, it is truly a pity so few are found to make the effort. Flowers around a door or clustered in a window, give an air of happy quiet and peace, of conscious security, and are a more correct indication of good taste, gentle feelings, and an unsullied heart, than silver plate or marble walls.

We claim it the duty of every man who is a farmer, to beautify and adorn his grounds and garden with flowers, plants, and shrubbery, and so arrange his yards and grounds as to give his habitation as Eden-like an appearance as possible. Should our farmers be thus true to themselves and dutiful to nature, then with truth of our country it might be said, in the language of the poet, 'tis

> "The land of the myrtle, the cypress, and vine,
> Where all but the spirit of man is divine."

Nothing is so attractive to the traveller as a fine country residence. It is

something for the eye to feast upon. It pleases the imagination, cheers the heart, and brings with it all the associations of happiness.

One blessing follows another. Sociality, refinement, and learning, follow in the train of rural improvement. The mind keeps pace with the outer man, and the love of the beautiful in nature inspires the mind with the love of the useful and the good.

IOWA PRAIRIE SKETCHES—No. 4.

BY "MINNIE."

JANUARY, the infant month of the new year, gave us rather a cold salute at his advent, when we hailed his approach at the first dawning morn of 1860; rough, angry winds wailed and howled around our dwelling, as if chanting the requiem of the departed hours of '59; and, with the mercury at 38 *deg. below zero*, all hands were kept busy piling the fuel into our stoves, and rubbing our aching fingers; but in a short time the wailing ceased, and the sun, which had risen fair and bright, seemed inclined to smile upon the new-born year. In forty-eight hours the mercury had risen to 10 *deg. above zero*, and Nature's pulse began to beat with a more healthy action.

This depression of temperature has, so far as I can learn, destroyed not only the peaches, but the *peach-trees*. Apples, I think, are not injured. Other fruit-trees are so scarce, that I have had no opportunity of observing the effect on them.

A fine young catalpa tree, a seedling of last year, planted for ornamental use, had, we supposed, of course gone; but at this time (May 12th) it is again in full leaf, and looks bright and healthy. A locust grove, sown on the 27th of May last, and which had attained an average height of something like 3½ or 4 feet, proves to be but very slightly injured. There was a very light fall of snow in January, which remained on the ground for some time.

February was a mild month for this region, the lowest fall of the mercury being 2 degrees above zero. The whole winter and early spring have been, it is said, with the exception of a few days in December and January, the mildest and dryest ever known in Iowa.

March, boisterous March, seemed to forget his blustering character this season, and showed only once or twice a frowning face during the whole thirty-one days. Indeed, we had *less wind* in March than in almost any other month for a year past, and the sun shined, most of the time, clear and warm. The mean temperature of the month was 55½ degrees Fahrenheit—the extremes 28 to 80.

On the 10th inst. grass began to show itself quite fresh and green on damp grounds, or wherever it had been burnt over late in autumn. Farmers were busily engaged in plowing, and sowing the cereal grains, and showed much hope and animation, notwithstanding their large cribs of corn remained unsold, and it was bringing in market only 12 to 15 cts. per. bushel, and at some places but a dime.

If we only had railroads to wheel it way into your Eastern markets, then, indeed, they might look up and work on with brave hearts. They still hope, however, "for the better time a-cumin;" yet hope, with fear that that better time is far in the future.

On the 30th, the leaf buds of the wild rose, walnut, cotton-wood, &c., were much swollen, and began to show signs of expansion. Cowslips (Caltha palustris) had leaves more than an inch in circumference; and all vegetation was at least a month more advanced than at the same date last year.

The first *flower* which I saw this year was one of the Caltha, mentioned above, and appeared on the *4th of April.* This was followed in succession by Viola delphinafolia and Pedicularis Canadensis, on the prairie; Anemone nemerosa, Claytonia Virginica, Sanguinaria Canadensis, Ribes rotundifolium, Ribes rigens, and Lysimachia Herbemonti or heterophylla, in the wood land; Astragalus obcordata, Phlox divaricata, and Hypoxis graminea, on the prairie; the last two of which are quite pretty, very abundant, and worthy of cultivation. Of the H. graminea (Nat. order Amaryllidaceæ), there are three colors, blue, white, and yellow. It mingles everywhere with the up-springing grass, and, together with the Viola delphinafolia, clothes the early prairie sod with a mass of tiny, delicate bloom, which, dotted here and there with the graceful Phlox, is quite charming to the beholder. In the forest, during this month, the elm, the willow, the cotton-wood, (Populus angulata,) the hickories, (Carya alba and C. sulcata,) etc., hung out their drooping tassels, and the soft maple (Acer rubrum) spread its crimson umbels.

But the "April showers," which, as the old saying goes, "bring forth May flowers," were wafted around us to the right and to the left, in their air-borne cars, and gave us scarce a drop to refresh the thirsty fields, or expand the drooping flower-cups. Strong, disagreeable winds blew almost constantly; the roads were *dry* and *dusty*, as in mid-summer, and the mean temperature of the atmosphere *lower* than in March; although we had a few very hot days in which the mercury stood at 83 degrees; but the month closed with a temperature below the *freezing* point, and ice half an inch thick in standing water.

The *sudden changes* and *extremes* of temperature, which often occur in a few hours, together with the almost constant *high winds*, which frequently swell to a gale, are the chief objections to living in Iowa. My table of temperature, from which I make extracts, reads thus: May 1st, sunrise, 30 degrees (viz., 2 deg. below the freezing point,) face of the sky fair, wind *north.*

May 2d, at 3 o'clock, 86 degrees; fair, wind *south.*

May 3d, at *sunrise* it was 60 degrees, and at 3 o'clock P. M., 89 degrees; fair, wind *south-east.* For the next two days it continued to range between 60 and 86 degrees. On the 5th, the *evening* observation at 8 o'clock 20 min. stands at 81 degrees; wind still *south-east*, but the face of the sky is *clouded;* the thunder rolls and mutters in the distance, and the hearty exclamation of every one is, "I hope we are going to get *rain* now!" We go to rest with bright visions of fresh green fields of grass and grain, and trees and flowers stretching upward, their bright leaves dancing with exhilaration, produced by quaffing largely from "the bottles of the sky." But we are soon aroused from our slumbers by a terrible storm of wind, which roars and surges like many mighty waters, and our house, trembling to its foundation, seems more like the hulk of a vessel at the mercy of an angry sea, than like a quiet landman's home. The clock is striking twelve. Hark! there is a terrific crash! Women shriek; children cry with fear; and men, springing from their beds, run about in the darkness. I too, starting up, exclaim, "What's happened? what *is* the matter?" But all is confusion,

one calling out, "Strike a light;" others, "Get some boards!" "Bring nails!" "Where's the hammer?" and directly one man is seen by the lightning's flash, trying to make a turn around the north-east corner of the house, with some broad boards in his arms; but the wind disputes his right, twists him this way and whirls him that, and it is with much skill in "*tacking*" that he at length makes his point, and where a window has been blown in, dashing glass and sash to pieces, he applies and makes fast his boards, shutting out the intruding blusterer, and restoring something like a semblance of order to the frightened household. The following morning dawns *fair* and *cool;* wind *north-west;* we have had *no rain.* But on the 8th inst. the long-wished-for blessing comes. For eight or nine months our wells, springs, and streams have been half dried up for want of rain; and this is the first time since February 22d, that enough has fallen to saturate the soil sufficiently to promote healthy vegetation.

[Not by any means a pleasant picture of prairie life, Minnie, and not even tolerable, except for the bounties so lavishly bestowed by Nature on the bosom of your beautiful prairies. Why will you not send us a collection of seed of your little pets?—Ed.]

AN HOUR IN THE VINEYARD.

BY J. S. REID, CONNERSVILLE, IND.

The operations of the vine-dresser for spring work are about over; the pruning, the staking, the tying, and hoeing are all done, and the young buds have burst from their winter cerements, and the bloom is waving in the balmy breeze; but how changed is my vineyard this season at *this* time, from what it was last year in May. Then *every* bud had opened its green bosom to the dew and the sunbeam, and the young branches were covered with the rich blossom of future joy; *now*, not more than one-half the buds have shown signs of life; the cases look dry and fruitless, so that under the most favorable circumstances not more than half a crop may be expected. What is the cause of this failure? Why is it the present should be worse than the past season? The vines are older, and the spring season has been more favorable than the last year's vernal months were; why do these young buds not start into life at the voice of spring?

Let us examine for a moment their outer covering; let us see whether the vital principal is extinct or not, under its tender sheath. We open the covering, but the life is gone; the gummy sheath which nature gave to it before winter set in, is broken, and instead of the glossy mail which shielded the young germ, a sponge-like substance is found, an evidence of death. Such was the prospect that greeted our steps into the vineyard in the opening of the merry month of May, and *now* the scene is but slightly changed.

I purchased of Ellwanger and Barry, during last fall, several varieties of new and much-lauded grape-vines, among which were the Delaware, Anna, Rebecca, Union Village, Clara, etc., all of which were planted with much care and attention, in the hope of passing securely the winter; but judge my surprise when I found them all dead to the earth line, and not much hope of a resurrection; but patience and perseverance triumphed.

How was this done? I went and obtained old glass fruit-cans, from which I took out the bottoms, and with these I made nursing glasses, placing one over every vine. How anxiously did I watch from day to day the first appearance of life in the semi-frozen bud, and how carefully did I aid the expansion of the young leaf from its earthy tomb, until one by one each vine gave evidence of full life, and the glass was full of the young leaves of the vine!

For a *few* days our last winter was unusually severe; the thermometer stood 10 degrees below zero, destroying all the peach buds, with many of the young trees.

Along the valley of the White Water not a peach blossom was seen this spring, and I am informed that the vineyards in the adjoining counties are as badly injured as my own, so that not more than one-half a crop of grapes or wine will be realized. Last season I made some two hundred gallons to the acre; now one hundred gallons must be the maximum of the vintage.

I regret that I do not live within a few miles of your sanctum, where a bottle of my "Pure Catawba" would moisten your dry "whistle," and attune your voice to the melody of spring; but living so far in the West that the expense of forwarding a few bottles to you would cost more than the value of the wine, I have given only the will for the deed. I have several seedling grape-vines, some of which will fruit this season; but until the second year's fruiting, neither the quality nor the productiveness of the vine can afford a safe criterion of its *true* value.

I have the Black Hamburgh blossoming in the open air. The leaves are pure and clean, and the berries well set; the bunches indicate large clusters heavily shouldered. These I covered during the winter along with the White Sweet-water, Black Prince, and El Paso, all of which are doing well. My Concord, Diana, and Isabella were all more or less winter-killed in the bud; but, on the other hand, my Lawton Blackberry, Red Antwerp, Cope, Wilder, and Orange Raspberries all survived.

The Apples and Pears in this neighborhood are chiefly safe, but the Cherry, Peach, and Apricot are all gone; and the Plum will soon be, as that felonious rascal, the Curculio, is among our orchards, and robs with impunity our best Gages before maturity.

But by comparing watches I find that my hour is about up in the vineyard, and I understand it to be standing rules with editors and all good writers, to keep within time, avoid prolixity, dulness, and stupidity, and when you have written enough, to stop; hence I close this rambling epistle by subscribing myself your friend.

P. S.—Having several seedling grape-vines now bearing, and many more that must bear superior fruit, I want to employ some noted PUFFER to bring them into notice; that is, after the Ontario, Maxatawny, and Brandywine have all run their race, and gone to the tomb of the Capulets; but do not think that I will engage *your* services. I will employ some Peter Funk to do this; a man whose virtue is free and easy, and whose conscience is full of the love of nature and the milk of human kindness.

[J. S. R. has passed his hour pleasantly and profitably. When he can spare the time, we shall be glad to pass another hour in the vineyard with him. We condole with him on the partial loss of his Grapes, Peaches, and Plums; he has been spared, however, to a greater extent than many others,

who will eat their "Peaches and milk" this year solely through the medium of the imagination; and those who can relish them in that way will have a good time of it. You are right, R., about your seedling grapes; do not send them to us for the purpose you suggest, unless you are quite sure of them, for we are apt to be very candid about such matters. Much obliged to you for the Wine. Hold on it till called for, which may be sooner than you expect.—Ed.]

THE MADRAS RADISH.

(From the *Revue Horticole.*)

The Madras, or Edible Pod Radish, was obtained in 1858 at the Edinburgh Botanical Garden by M. Courtois-Gerard, and was introduced into France by that skilful horticulturist. It is an annual plant, of tall, bushy, and vigorous habit. The root is turbinate, conical, white inside and out, having a total length of 30 centimetres or more, and a diameter of 10 to 12 centimetres at the largest part, which is near the neck. [A centimetre is about four-tenths of an inch; a metre about thirty-nine inches.] The tendency is, to strike a strong, deep tap-root. The stem is about one metre high, and about two to three centimetres in diameter. It is straight, of a clear green color, spotted with red, smooth, and furnished from the bottom upwards with numerous branches, upright and undivided at the base, spreading and subdivided at the top. The leaves, 40 to 45 centimetres long, and 15 to 20 centimetres broad, are nearly sessile, lyrate, with deep, wide divisions, smooth on the upper surface, slightly pubescent on the under side, mostly near the edges. The form of the leaves changes with their height on the stem, the upper leaves being petiolate, entire, lanceolate, and dentate.

The inflorescence, as in all the cruciferæ, is corymbose, but becomes racemose by the elongation of the axis. The flowers are regular. The calyx of four converging sepals becomes of a rosy tint in the expanded flower. The corolla is formed of four petals placed cross form, spread, of a clear violet color, showing a network of veins of dark violet, or white mixed with pale violet; the four long stamens extend beyond the throat of the flower; the two short ones reach only to the opening, as does also the pistil, which is terminated by an obtuse stigma. The seed pods attain the length of 30 centimetres, with a diameter of 1½ centimetres at the base. Their ordinary size is as represented in the figure. They are erect, and form an angle with the pedicle; are of the shape of a cone very much elongated, showing, in the lower half, swellings corresponding to the compartments containing the seeds. There is a slight contraction at the base, and the summit is a long conical point or beak. The shells of the pods are thick and fleshy; the seeds, single in each compartment, are oval, of a bright reddish brown, slightly rough, about four-tenths centimetre long, and three-tenths centimetre thick.

This plant was labelled at the Edinburgh Botanical Garden, *Raphanus caudatus* of Linnæus. M. McNab, the director of the Garden, received the seeds from India with the designation of *Madras Radish.* It differs considerably from the drawing and description of the *Raphanus caudatus* as given by Linnæus. The Swedish botanist states that the seed pods, called *Mougri* by the Indians, attain the length 1.65 metre; but, according to Schkur, they are not often more than 33 centimetres, which corresponds



THE MADRAS RADISH

with the dimensions noted by M. Courtois-Gerard. In the notice on this subject presented to the *Société Centrale d'Horticulture*, M. Duchartre regards this radish as merely a variety of the common radish (*Raphanus sativus* of Linnæus). The reasons given by our learned associate do not, however, appear to us perfectly convincing. Be that as it may, we do not perceive any objection to its retaining the name of *Madras Radish*, by which it was introduced by M. Courtois-Gerard.

There is a variety of this plant with white flowers, pods of a paler green and more fibrous texture, and larger roots.

The culture is easy. It adapts itself to the most meagre soils, but prefers a good free loam. To be able to gather it for a long time, it is sown at different times from March to the commencement of August, but the end of June and beginning of July are the best periods. It is sown where it is to remain, at distances of about two metres each way, placing two seeds in each place. It is watered a few times, especially the earlier sowings. The seeds, which retain for a long time their power of germinating, push in three or four days. The surplus plants can be removed, with a ball of earth, to fill vacancies.

By sowing on a bed of salads or spinach, there is the double advantage of economizing land and hastening the crop, as the plant comes forward more rapidly than when grown on a naked soil.

In some localities, as, for example, in the calcareous plains of Montrouge, the Madras Radish has been attacked by the flea, which, as is well known, has a marked predilection for the cruciferæ. At Thernes, M. Courtois-Gerard has noticed but few of this insect, but an abundance of the green fly, (aphis,) from which he freed his plants by frequent waterings.

The root of this radish is edible, and has nearly the taste of our common radish. When it is too old, it becomes fibrous and hollow—a mere fleshy shell.

The most remarkable characteristic of this plant is the spicy taste of the seed pods, analogous, in this respect, to the common radish. In order to make this peculiarity available, it is necessary to gather them before their maturity; at a later stage of growth they become insipid and leathery. Those of the white-flowered variety are inferior in quality.

In general it may be remarked that the size, color, and quality of the seed pods are in inverse ratio to the development of the root; there is, therefore, no advantage in substituting the Madras Radish for the ordinary kinds, if the root only is wanted. This is not the case, however, if the plant is cultivated for its fruit, which, according to our experience, is perfectly competent to figure as a side dish on our tables.

The plant is very prolific, as may be seen by the figure, and this, too, in a small space, making it desirable for small gardens. We should add, that, without being exactly ornamental, the flowers are not without agreeableness, particularly the white and lilac varieties. It is quite possible that the fruit will make a desirable pickle, to which use the *Raphanus caudatus* is applied at Madras, as we learn from Linnæus.

[The seed of the Madras Radish was introduced here this spring, and we have it growing. Its value, whatever it may be, will therefore soon be known.—Ed.]

NEW OR RARE PLANTS.

Pteris tricolor (Linden).—From M. Linden, Brussels. This beautiful new variegated fern was awarded a first-class certificate of merit. It is a dwarfish plant, with the habit and appearance of Pteris aspericaulis, of which it is a variegated variety. The fronds are about a couple of feet in length, pedately pinnate-pinnatifid, *i. e.*, pinnate, with the lowest pinnæ bipartite, the pinnæ and branches being pinnatifidly divided; the stipites are roughish dull purplish, the rachides and costæ purplish red, the latter bearing purplish-red spines on their upper side at the base of the segments. The fronds are of a deep green, the purplish-red rachides bordered on each side with a broad band of greyish-white; the young fronds are deep red. The colors are very striking and effective, and render this a most important addition to the fern family, among which variegated forms are rare. It was stated by M. Linden to have been introduced from Malacca.

Adiantum patens.—From Messrs. Veitch and Son, Exeter and Chelsea. This is an extremely elegant stove fern, producing a tuft of erect fronds, which in this instance were a foot or more in height, though the plant was not fully developed. The fronds are bright green, pedately branched, the branches being pinnate; the pinnules oblong, very obtusely rounded, somewhat curved backwards, crenately-lobed, and bearing a few reniform-orbicular sori. The plant was awarded a first-class certificate of merit, as being a desirable species of a highly ornamental character. It had been obtained from the continental gardens, as a species of Lindsæa.

Lælia præstans.—From R. Warner, Esq., Broomfield. A weak plant, bearing one small flower, of a very ornamental character. The stems were short clavate; the leaves oblong acute or bluntish. The flowers were of a pale purplish rose, three and a half inches in expansion; the sepals lanceolate, the petals ovate, twice as broad as the sepals, the lip rolled up into a curved tubular form, about an inch and a half long, and having inside, near the mouth, four very slightly raised or crested veins, the two exterior of which were the most prominent; the tube-formed portion of the lip was orange-yellow inside, and tinged with purple exteriorly, the mouth being of a deep rose-purple indistinctly margined with white. It was very closely allied to L. pumila.

Lælia pumila, var. major.—From R. Warner, Esq. This was also a small weak plant, and proved to be identical with the Cattleya pumila, var. major, of Lemaire ("L'Illust. Hort.," vi., t. 193), who proposes to reduce Lælia to a section of Cattleya. It was similar in habit to the foregoing, with rather longer and more decidedly oblong leaves. The flowers also were larger, measuring over four inches across, with the lip two inches long: the sepals and petals of the same form and color as in that called præstans, but the lip differently colored, the tubular portion being white inside, and whitish below, purplish above on the outside, while the mouth was rich rose-purple, paler towards the edge; two obscure crested veins only were visible inside the lip. Mr. Warner stated that the latter plant, which he called Lælia spectabilis, "always has larger flowers than præstans, even when the bulbs of præstans are the stronger of the two." The plants had been imported from Brazil as Cattleya marginata, and were both regarded by the Committee as forms of the variable Lælia pumila, better known under the name of

Cattleya pumila, of which the Cattleya marginata of gardens is again another form.

Oncidium cheirophorum (Reich.).—From R. Warner, Esq. This was a cut spike of an exceedingly curious small-flowered yellow species, much less showy than many other kinds, but of remarkable structure, and forming a pretty, free-blooming, small-growing plant. It had been in bloom for six weeks: the sepals and petals were roundish, concave, and reflexed; the lip three-lobed, with two ear-shaped projections at the base, the middle lobe roundish, and the lateral ones somewhat oblong spreading; the column had a pair of large curved lateral wings near the top, a strong recurved tooth or horn standing up in front of it, and the crest of the lip was arched, with a pair of teeth at its base. The flowers were clear pale yellow, and slightly scented.—*From the London Horticultural Society's Proceedings.*

Dryas Drummondii, *Rich.* Nat. ord. *Rosaceæ.* Native of the Rocky Mountains, North America.—A hardy perennial, of procumbent habit. Stems and branches woody. Leaves oval or obovate, crenate, dark green on the upper surface, covered below with pure white down. Petioles short, stipulate, downy, tinged with red. Stipules subulate. Scape terminal, one-flowered, downy, with a single awl-shaped bract near the middle. Calyx deeply divided into seven or nine acutely ovate, membranaceous segments, clothed on the back with purple, viscid hairs. Petals equal in number, and alternating with the calyx divisions; broadly elliptical, with a short claw, bright yellow. Stamens numerous, with long hairy filaments. Styles also hairy, persistent, and becoming elongated in fruit.

A very beautiful alpine plant, but also rare; being, indeed, seldom seen beyond botanical establishments. It is well suited for shady parts of a rockery; and flowers more profusely, and longer in duration, in such a situation, than in pots, or in a more exposed position. The compost it prefers is light, sandy loam about one part, with two parts of peat or leaf mould. In pots it must be thoroughly drained, and protected from the autumn rains. The long feathery styles, adhering to the ripe seeds, give an interesting and a graceful appearance to the heads of fruit.

Primula Stuartii, *Wall.* Nat. ord. *Primulaceæ.* Native of the Himalaya.—An alpine, herbaceous plant. Leaves radical, numerous, long, broadly lanceolate, acute, gradually gliding at the base into a short footstalk, which is much grooved on the upper side; margin acutely serrated, pale green, and shining above: covered below with yellow farina. Scape about fifteen inches high, terminating in an umbellate inflorescence. Involucre composed of numerous lanceolate leaflets. Calyx monosepalous, tubulate, and slightly campanulate; limb divided into five acutely lanceolate segments, farinose. Corolla monopetalous; tube long, contracted near the mouth; limb salver-shaped, divided into five rounded segments—yellow, tinged with orange towards the centre. Stamens five, attached to the tube of the corolla. Style long, surmounted by a capitate stigma.

This is one of the most striking species of the genus Primula, and by no means a common one; indeed, it is a pity it should be so scarce. Peat and loam in nearly equal parts, with a good portion of sharp, gritty sand, form the most suitable compost for it.

Vriesia psittacina, *var.* rubro-bracteata, (*Red-bracted variety of Parrot-flowered Vriesia*).—"Native of Brazil, and a very great ornament to our

stoves, by bearing its handsome scarlet and yellow spikes of flowers in the winter."—(*Botanical Magazine, t.* 5,108.)

Nepenthes ampullaria, (*Ampullaceous Nepenthes, or Pitcher Plant*).—Native of the Singapore forests, and other places in the vicinity. Flowers in August. Pitchers small and unattractive.—(*Ibid., t.* 5,109.)

Fuchsia simplicicaulus, (*Slightly-branched Fuchsia*).—Sent from Peru to Messrs. Veitch, by their collector, Mr. W. Lobb. Bloomed in October, 1858. Flowers "rose scarlet," large, and beautiful.—(*Ibid., t.* 5,096.)

Hibiscus radiatus, *var.* flore purpureo, (*Purple-flowered rayed Hibiscus*).—Common in the Calcutta Gardens, but raised from seeds received from Mr. Wilson, superintendent "of the *late* Botanic Garden at Bath, in the Island of Jamaica. I say *late*, an awful avalanche of stones having recently overwhelmed the Garden."—(*Ibid., t.* 5,098.)

Phyllocactus anguliger, (*Angle-stemmed Phyllocactus*).—Native of western Mexico. Blooms in the winter. Flowers large, white, and very fragrant.—(*Ibid., t.* 5,100.)

Thunbergia coccinea, (*Red-flowered Thunbergia*).—This beautiful and gigantic climber has been called, also, *T. pendula* and *Hexacentris coccinea.* It is a native of the jungles in all the hilly regions of tropical India. It has at length bloomed in the ample space of the Palm-house at Kew.—(*Ibid., t.* 5,124.)

Cymbidium eburneum, (*Ivory-like Cymbidium*).—"This lovely and rare Orchid" is found at an elevation of five to six thousand feet in the Khasia mountains of East Bengal. Flowers ivory-white, blooming in April.—(*Ibid., t.* 5,126.)

Ceanothus Veitchianus, (*Mr. Veitch's Ceanothus*).—This "magnificent acquisition to our hardy shrubs" was sent from California by Mr. W. Lobb to Messrs. Veitch. It surpasses even the other species—*floribundus, Lobbianus,* and *papillosus*—"in the abundance of its bright mazarine-blue flowers."—(*Ibid., t.* 5,127.)

Datura chlorantha flore-pleno, (*Double yellow-flowered Thorn-apple*).—Sent from South Australia, where it produced "its sweet-scented flowers for seven or eight months;" "planted in the open borders in June, it may be expected to bloom here during August, September, and October." Probably a native of Europe, but raised in Australia from imported seed.—(*Ibid., t.* 5,128.)

A FEW NOTES ON GRAPES, PEARS, ETC.

BY H. A. BIZZELL, CLINTON, N. C.

I am quite ready to confess that I am no pomologist; neither do I wish to write for the "sake of Buncombe," as it is called here in our State. Nor should I have pretended to write at all, but for the appearance of an article in the June No. of the Horticulturist, over the signature of Hugh McLean.

If I can not write anything that can be made useful to some portion of the human family, I prefer not to write at all, as spurious literature, or the circulation of such, I have as much contempt for as I have for the circulation of spurious coin. In the language of my friend, G. W. Johnson, (of Milton, N. C.,) though it may be less immoral, it is equally mischievous.

The only object of the writer seems to have been to dispute the utility of

the mode of pruning Grapes as promulgated by me in the HORTICULTURIST for March, 1860. He admits that a second crop was produced, and one that did not mildew, although he says the first crop did mildew. This admission will do away with the objection of the editor of the HORTICULTURIST in the March No., as appended to my article, that more than one crop would not reach maturation. But says he, "the grapes were sour." I do not pretend to say that the second crop will be equal to the first; though I do say, if properly managed, they will be good grapes—no more acid, perhaps, but less sugar, which makes them not equal to the first crop.

It is well known to you that grapes grow upon the young shoots of the present year; and you also know that when the Isabella grape and many others are highly manured and pruning neglected, that mildew is almost certain after the vine has passed the third year of its age. The usual custom of training grapes horizontally, or permitting them to run on trees, as generally practiced in this country, precludes all idea of proper pruning. In such cases here the first crop mildews, and a second crop is not unfrequently produced very late in the season; such grapes are generally insipid, if ripened very late. From what Mr. McLean says of his, (ripened in November, of course,) they must have been identical with such grapes as I have above described, and about equal to a third crop produced in the manner I have described in a former number of your work.

Could a man that knows no more of botany, vegetable physiology, and the kindred sciences, than to graft a peach upon a persimmon with the expectation of succeeding, know much about grapes or any other fruit? Amygdalus and Persicus are words unknown to such men, and you, Mr. Editor, could not help smiling at the very idea, I know from your remarks below his article. Could such things occur in the history of the world, that one family of plants and trees would succeed equally well upon any other, our forests might all be converted into one grand orchard.

I saw with pleasure that Mr. John Egan had applied this method of pruning to grapes under glass for years with perfect success. May No. HORTICULTURIST, page 247.

I regret to see that the peach crop is likely to fail in most parts of our country; we have here a fair crop. Apples are not so abundant. Pears are doing well. I notice among my own what I have not seen in two or three years—blight on both apple and pear-trees in this vicinity. My dwarf pears have seldom blighted much, except some particular varieties. I have had the misfortune to lose every Beurré d'Aremberg I have ever raised, about the fourth or fifth year of their growth, by blight. My Seckels do well and bear finely this year; Bartlett the same. The Washington pear deserves more attention than it has received, as Mr. Landreth has well remarked in his Gardener's Dictionary. It never has blighted with me, is a beautiful grower, succeeds well on quince, bears abundant crops, and the fruit is equal to the best, and has even more of the musky flavor than the Bartlett. The Marie Louise, White Doyenné, Belle Lucrative, Duchesse de Berri, and Beurré Diel are all bearing well for me this year. The Bloodgood, Dearborn's Seedling, and Duchess d'Angoulême are not so full; in fact, the latter never has sustained its high reputation in this latitude; we work it only on quince.

Although this article has now reached a greater length than I at first intended, still I wish to communicate one other thing that may be, as you say

of the grapes, "more curious than useful." I saw an article which was written by some very able gentleman a few years ago, in which the declaration was made that the Chinese had far outstripped the balance of the world in many of the useful arts, and among other things that were mentioned was their success in dwarfing the apple and pear, as well as other fruits. It was asserted by the writer that he had seen perfect trees, with fruit on them, not more than two feet high. Now I can show a perfect apple-tree, bearing a full crop, (growing side by side with dwarf pears, which are at six years old from ten to twelve feet high,) that is not more than two feet high on land as rich as I can make it. This is accomplished by grafting the apple into the small shrub which we call here "choke-berry." It is a miniature apple, the botanical name of which I do not know, but a specimen of which I send you for information. If you can not tell from this, I will send you the blooms next spring. It is, however, of the apple family, and I have no doubt but that the pear will succeed upon it. It does much better when the ground is moist, or too wet for apples, than when it is dry. One of the most beautiful things I have ever seen is a yellow Siberian Crab Apple worked into one of these, not more than 2½ feet high, just as full of fruit as it can be.

[Mr. Bizzell may continue to write such articles as the above, with the full consciousness that he *is* writing "something useful to the human family," and we hope the spirit will move him to do so often. We admitted, in our April number, that we had failed to understand Mr. B.'s method fully, but were of opinion that only the first bunches would ripen at the North, and that the advantages of the new system of pruning would, therefore, be confined to the South; we suggested, however, that it might have its advantages for grapes grown under glass, and this view was confirmed decidedly by Mr. Egan in our May number. Mr. B. seems to have overlooked the correction we made. Next came Mr. McLean's testimony, which impelled us to call for more light in regard to its application to the vineyard. Mr. B. responds, and we have additional light. We shall apply the new system to a number of vines, and others here will do the same, so that we shall know how far it can be made available at the North. Its advantages, however, will be more manifest in the genial clime of the South. Mr. B.'s account of his dwarf apple is exceedingly interesting, and very opportune. The little slip sent we take to be *Pyrus* or *Aronia arbutifolia*. We suggest it, and Mr. B.'s remarks, to the consideration of all lovers of fruit-trees in pots.—Ed.]

THE CONTRAST—THIRTY YEARS AGO AND NOW.

BY WILLIAM BACON, RICHMOND, MASS.

The year 1860 opens a new decade in the history of human progress and improvement; and, if we may judge from the results of its early dawnings, we come to the agreeable conclusion, that more advancement will be made in improving the rural aspect of the country in the ten years next before us, than has been the result of the past sixty of the nineteenth century. This may seem a bold calculation to some indifferent, faithless ones, but the careful observer, we are sure, will join with us in the prediction, and heartily coöperate to accomplish its fulfilment.

"Thirty years ago," and how few thought of planting out shade or fruit-trees! At that day there was a mania for "*cutting down*" orchards instead of improving them, and the folly of it has been fully realized in the scarcity of fruit that followed, in some districts at least. How far the trees that were sacrificed could have been improved and made more valuable is of little consequence now. Their legitimate owners looked upon them as so many cumberers of the ground, and, without giving a thought to the practicability of digging about and dunging their roots, scraping and cleaning their bodies, and grafting their tops with varieties of whose fruit the market can not be supplied for a long time to come, "behold, the axe *was* laid at their root," the air made desolate of fragrant blossoms, and successive autumns bereft of great lapfuls of beautiful and delicious fruits, bringing comfort and health to the consumers. Then, however, good fruits were not appreciated as they now are. In one particular instance we recollect hearing a farmer exult, that his Greenings, Spitzenburgs, and Seek-no-furthers, the popular apples of the day, had brought him twelve and a half cents a bushel, taken a mile to market. In several instances since, the same varieties of fruit, from the same trees, have brought from fifty cents to a dollar a bushel in the orchard.

"*Thirty years ago,*" a few "foolish fellows" had begun to plant shade trees by their dwellings and along the wayside. In the more refined villages, their streets were being lined with those beautiful appendages of health and comfort; but in the rural districts the person who ventured on the experiment was, by almost common consent, called a fool. "Why waste time and strength for setting out trees? They won't half of them live. If they do, they won't amount to anything in your day. Let posterity plant its own trees; I've enough to do without that." How often have men and women, who used the above or similar language, and spent as much time in ridiculing the planter as he did in setting his trees, looked upon the beautiful, stately, and luxuriant growths of his creation with admiration, and wished, though it may for very shame have been a suppressed wish, that they had planted trees too. If they had done so, how many rough and wrinkled spots on the face of nature would now have been dimpled with beauty! What long and stately rows of trees would have marked the meandering courses of our thoroughfares; and how many a dwelling, now desolate of trees, exposed to the full glare of the sun, the merciless peltings of the storm, and the rough blasts of angry winds, would have had a mitigating shield of beauty and verdure thrown around them! Then look at it through the great American magnifier, the "*almighty dollar;*" how many more sticks of timber, worth so much a foot, and how many more cords of wood, all handy to get, and worth just so much a cord, standing, would every farmer, every land-holder, have had now, in a marketable condition, growing upon his premises!

From every consideration that can be brought to bear on this subject, it is a matter of cheering encouragement that there has been so general a *waking up* in this matter. Though now and then a solitary Rip Van Winkle, or in some instances a whole community of them, may be found still asleep, with the rusty musket of the old ways by their side, such cases are rare. From the observations made in our limited travels this season, and the information that comes to us from abroad, we have come to the conclusion, (and we trust it is a safe one,) that more ornamental trees have been

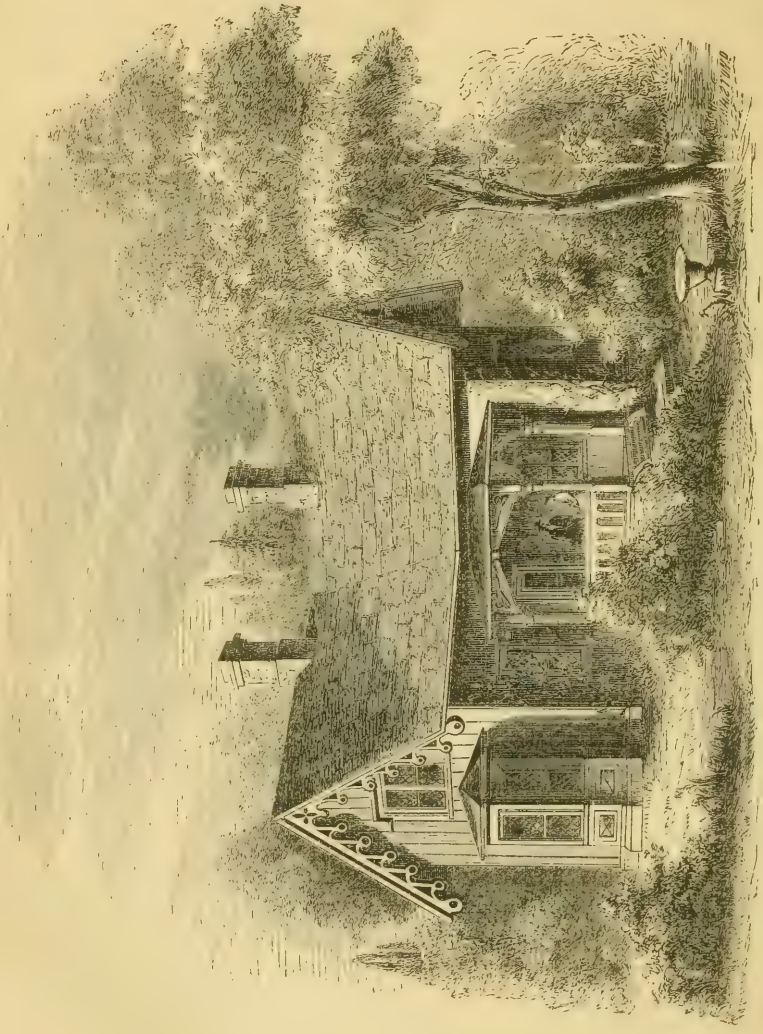
planted in the spring of 1860, than in any two years that ever preceded it. Small villages boast of the accession of two or three hundred trees, and in larger ones, not before provided, an increased number is shown.

Individual labor has ceased to have the monopoly of these improvements. Associations, under the names of "Farmer's Clubs," "Ornamental Tree Associations," &c., are becoming "fixed institutions" all over the land; and it is to their united and concentrated effort the country is beginning to smile under the new order of things. May the number of these associations increase until it embraces the whole population of our country.

"*Thirty years ago*" the taste of tree-planters in general looked at only one variety, the maple, to satisfy their aspirations. A few had learned to appreciate the pride of our forests, the elm, and fewer still sought beauty in variety. But in canvassing the trees that were set out thirty years ago, we find the maples so far in the majority as hardly to give a position to other trees. Then, but few evergreens were planted out. "It was so difficult to make them live. They looked so gloomy, and the wind howled through them so, they were really melancholy." With many, the maple still maintains supreme ascendancy, and no one can deny that it is a beautiful tree, developing itself with much symmetry and gracefulness. And what tree of our American forests, planted in a favorable locality, will not develop the charming, eye-feasting, pleasure-inspiring qualities? We have planted many trees, have visited forests to see their denizens flourish in the soils where nature planted them, and where age had given them full maturity; and we have never yet met with a sylvan deformity, unless where inflicted by torture of man, and have never seen a species or variety that did not possess enough of the forms of beauty and charms of elegance, and of peculiarities strikingly its own, to warrant it a place in any niche where observation may lead her votaries, or refined and cultivated taste may seek a recess or a banquet in retirement, to feast upon the charms of the natural creation.

Where such untiring variety exists as we find in our forest trees, why do we confine ourselves to the few we have done in planting out our grounds or adorning the wayside? The maple is fine, and will give agreeable contrast to the larch or the ash, if planted by its side; the poplar, that comes into leaf early, should have a place by the chestnut or the oak, and so on, making changes and giving contrasts until every variety of tree has its proper position.

We have alluded to evergreens, and the funereal character that was once attached to them by some—not all, however, by a pretty large number. It has been found that those sighs of the wintry wind that warble in their branches are only its death dirge, making melody to the power that breaks its violence, and tempers it to meet the circumstances of all living things it might otherwise molest. In the desolations of winter, they stand beautiful memorials of the departed glory of summer days gone by, and give us assurance that spring shall again drape the earth with its mantle of verdure. No grounds can be protected from the inclemencies of climate without their protecting agency. No border of trees along the wayside can claim beauty or attraction, unless they are freely scattered through its ranks. In summer they will give beauty to variety, and in winter they will greet us with the ardor of friendships that survive the storm, and live unchilled by the frosts of time.



DESIGN FOR A SUBURBAN COTTAGE.

DESIGNS IN RURAL ARCHITECTURE, No. 3.—DESIGN FOR A SUBURBAN COTTAGE.

BY GEO. E. HARNEY, LYNN, MASS.

We offer the readers of the Horticulturist this month another design for a rural dwelling.

It is smaller and less expensive than those we have before presented, and on this account we are confident that it will meet the wants of a larger class of people.

It is designed to be built of wood, and covered with plank put on in the vertical manner, and battened. The roof is to be covered with cedar shingles; part of them pointed at the lower end, and laid on in the lozenge or diamond pattern, and the rest put on in the usual manner.

The exterior is somewhat ornamental in its character, and great care should be taken in building, that the trimmings have a solid, substantial

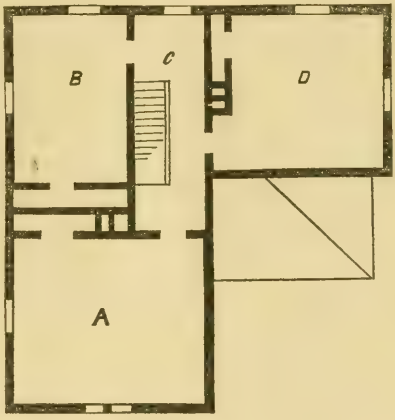


appearance, the verge boards more particularly. For a cottage of this size, the plank from which they are cut should never be less than two inches in thickness, but oftentimes thicker than that. The bay window and verge boards form the prominent features of the front, while the entrance door is shielded by a veranda eight feet wide, supported on heavy posts and guarded by a balustrade. The upper panel of the front door is glazed, to admit light into the hall. This hall is 6½ feet wide and 13 feet long—contains a flight of stairs to the second story, the only chamber flight in the house—and opens into the several rooms.

The parlor is 14 feet by 15 feet 8 inches, and is lighted by the bay window in front, and two single windows on the sides. It also contains a closet on the side of the chimney breast.

The bed-room is 9 feet by 14, and is furnished with a large clothes-press ; a flue runs from the room through this closet into the chimney.

The kitchen measures 13 feet by 14 feet 6 inches, and opens into the pantry, which has on the left side a pump and sink, with a closet underneath, and is fitted up with shelves for stores ; it opens out upon a platform, from which steps descend to the yard. Under this platform is an entrance to the basement, which may contain a cellar kitchen with oven and boiler, closets, store-rooms, and fuel-rooms.



On the second floor are three good-sized chambers, well lighted, and supplied with closets.

The height of the first story is 10 feet 6 inches, and that of the second is 4 feet at the eaves and 10 feet in the centre of the rooms.

This cottage could be built for about $1500.

[The reader will not have failed to observe, in all Mr. Harney's designs, a most economical and convenient arrangement of the interior ; and this, in our opinion, constitutes the chief excellence of a dwelling ; for however desirable may be a certain degree of exterior ornamentation and picturesqueness, the comfort and economy of the household depend so much upon the interior arrangement, as to be entitled to the first consideration in the estimation of all. Mr. Harney will presently furnish designs for outbuildings, rustic work, &c., in which we have no doubt he will be equally happy. —Ed.]

THE SINGLE STEM, DWARF, AND RENEWAL SYSTEM OF GRAPE-CULTURE.

BY WILLIAM BRIGHT, PHILADELPHIA.

In the June number of the Horticulturist I observe that the credit of first announcing the Single Stem Renewal System of Grape Culture, which forms the basis of my recent work on that subject, is given to my neighbor, Mr.

W. Saunders, of Germantown. Mr. S. I esteem as one of my personal friends, and as a clever, pains-taking member of the horticultural profession, and I was rather surprised to discover an attempt on his part to set up a claim of this kind. I fully believe that the method of growing grapes proposed in my work is new, and that it originated with myself. It has been received by the horticultural profession throughout the United States as new. It is not only not in practice, either in the grapery or the vineyard, that I am aware of, (except in some half dozen houses and vineyards planted by myself,) but it is doubted by many whether it is a system that will answer in practice at all. Now I believe that this is the best system of grape-culture ever invented, either for native grapes in the vineyard, or for foreign kinds in the cold grapery or forcing-house. I think it will become the universal system, until a better one shall be devised ; and I shall certainly be proud to be the author of a new and perfect system of American grape-culture.

In the month of June, 1858, the plan of growing grapes on a single stem, cut down every other year, and fruited during the intermediate years on dwarf canes, was fully matured in my mind, and was spoken of freely by me in conversation. In the spring of 1858 I planted some Diana vines for one of our leading city editors, on this system, and fruited them last year on dwarf canes, with the best results.

In the fall of 1858 I prepared my work on Grape-Culture ; in January, 1859, placed it in the hands of the printer ; announced it in the *Gardener's Monthly*, July, 1859, and published an extract from the manuscript.

In May, 1859, I planted, for a gentleman within the city limits, on the east side of Germantown, a vineyard of three thousand natives vines, on this system, viz., two feet apart, so as to permit each alternate cane to be cut down annually, and with wire trellises less than six feet high. In July, 1859, I erected a vinery for the same person, one hundred feet long, and prepared a border for fifty vines on this new system. In May, 1859, I also superintended the construction of a vinery in West Green Street, Philadelphia, on this plan, which will be fruited this year ; and the subject was constantly talked of by professional gardeners, personal acquaintances of Mr. Saunders, in and about Germantown and Philadelphia. (Germantown, it is probably known, is a district within the corporate limits of Philadelphia.)

Nearly ten months after my work was written, (viz., in September, 1859,) and more than six months after my single-stem vineyards and grape-houses were planted in and about Germantown, Mr. Saunders suggests, in an article in the Horticulturist, that vines might be cut down every other year with advantage, and hence it is assumed that the idea did not originate with myself. I will not say that Mr. S. took an unfair advantage of me, in publishing this idea when he knew that I was about to publish it. I cared nothing about this. It was generally known in Philadelphia to be an original and favorite plan of mine, and I was glad to find it approved by any person of intelligence. In the fall of 1859 I went to England, and the publication of my work was delayed till my return.

In May, 1860, Mr. Saunders' Prize Essay on Grape-Culture, written for the *Farmer and Gardener*, of Philadelphia, was published, in which he says : "Close planting" (in the grapery, viz., two feet apart) "*allows* the cutting down of a cane *occasionally*, or each alternate cane yearly, *as may be de-*

sired," but he does not present it as a special system, nor does he recommend it at all in that essay for *vineyard culture;* on the contrary, he advises only the old two-armed system with upright shoots.

Now, if there is anything in my work on the Grape new or valuable, I feel assured it is this single stem, dwarf, and renewal system; and I claim that I wrote my work, announced its publication, and put my method in practice, in Mr. Saunders' own neighborhood, months before he alluded to it in the article referred to. I further claim that I am the only person who has ever proposed this system, as adapted to the *vineyard culture of native grapes*, which I consider the chief important point at issue.

A few words as to the merits of this method of culture. I think the horticultural profession generally do not understand the nature and extent of my system. I propose to cultivate native grapes with as much care and precision as we do the foreign kinds, and to produce large crops of perfect grapes and large bunches free from rot and mildew. In the first place, I require that the vine shall be planted shallow, in soil not over-rich, and the roots kept near the surface by mulching and top-dressing. Next I demand, as a requisite to success, that the cane shall be grown as a dwarf, not over three to six feet long, and kept constantly concentrated within that limit by summer pinching, and that the laterals shall be stopped at least four times during the season. No wood of any consequence must be grown to be cut away at the fall pruning. If the vine be weak, the leader must be stopped several times. When the cane is fruited, *only one bunch* must ever be left on each shoot, and the shoots must be stopped as soon as the fruit is set at two joints beyond the bunch, and the stopping process must be continued on the shoots and laterals, leaving one new leaf on each new joint each time of stopping, until the stoning commences. Nor must the shoots or laterals be allowed to extend to three or four joints, either while growing the canes or when fruiting, before this stopping is performed. My idea is to cultivate the native as carefully as we are compelled to do the foreign vine, in a pot; and if this is done, I am sure the result will be in the highest degree satisfactory. If the best possible table grapes be desired, I would advise thinning the bunches as we do in the grapery, and I would also limit the length of the cane to three feet or less. After fruiting, then cut down the entire cane, leaving only two or three eyes on the *last year's wood*, and take a whole year to produce a new cane before fruiting again.

Now, will anybody assert that this system of growing grapes is not new, or that I was not the first to announce it and to put it into practice? On the contrary, in its application to native grapes in the vineyard, is it not yet a question with some of our best grape-growers, whether it will answer? Attached to Mr. Saunders' Prize Essay on grape-culture, lately published, are two other essays. In one of them, by Mr. F. J. Cope, the author, says: "I am convinced, by experience and observation, that no [native] vine can very long maintain its original vigor, which has been for a series of years annually pruned in nursery style." Again: "The healthiest and most prolific vines I have ever seen are those that had never been pruned at all." The other essay is by J. M. McMinn. He says, "Our [native] vines will only endure a moderate amount of pruning; the too free use of the knife on them produces disease, and invariably shortens their life. We have seen fine natives hopelessly ruined by theoretic pruning."

These are the ideas generally entertained by very intelligent grape-grow-

ers. It is thought that the native grapes must be allowed to grow in a wild, rambling form, over high trellises or trees, and that any attempt to prune or restrain them will be fatal to their health and fruitfulness. On reading such writing as the above, one would suppose that it would be dangerous to stop a rampant shoot or lateral, or even to take off excess of fruit. "To attempt to confine the growth to mere stakes," says Mr. McMinn, "will prove a failure on all our American species."

This declaration I feel ready to meet with another. I assert, that when grown as dwarfs upon my system, the native vines will not only retain their health and vigor for an unlimited number of years, but that I can produce upon a cane not over six feet long, a crop of native grapes, having six qualities required for perfection in grape-growing, (viz., ripeness, perfect color, high flavor, size of berry, size of bunch, and weight,) that will excel in all, or a majority of these points, any crop that can be grown upon any unrestrained cane of equal age, six hundred feet long. You may extend your vine over half a dozen trees, if you like, and I will keep my dwarf tied to a "mere stake." I shall soon be ready to show canes and fruit, grown upon this system, both of native and foreign kinds. I wish to see the question reduced down to "dots." Let the matter be tested, and let facts decide. I am ready to abide the issue.

One thing I request the profession to notice. I do not prune or use the knife upon my dwarfs during the process of growth, except to cut down the entire vine every second year. I pinch in the leader, the shoots, and the laterals, while yet tender, and only direct the force of the sap in new directions, *gently*, so as not to give a violent check to the cane at any time. I know very well that the vine will not endure the severe pruning of large branches, or even of strong shoots and laterals, without injury. I avoid this evil by not permitting unnecessary wood to grow at all. Hence, I do not prune severely. My practice is based upon "stopping," not pruning. If I could only "stop" the spread of error and falsehood as easily and as successfully as I can stop the useless and injurious growth on my vines, I think I should be tempted to turn preacher at once.

[Our remarks last month were simply intended to supply what had been deemed an oversight, and to place before our readers the facts in the case, so far as we had knowledge of them. The article in the *Gardener's Monthly*, which we supposed to be on the same subject, relates, we find, to regulating the temperature of vine borders. Mr. Bright has now furnished the facts on which he bases his claim to be the originator of the "single stem, dwarf, and renewal system," and we must do him the justice to say that he has presented them in a fair and good-tempered manner, offensive to no one. It is much to be regretted that controversies of this kind, among professional men, are sometimes conducted in a spirit befitting only a modern politician; such a spirit ought to find no place in horticultural literature, for it is a libel on its humanizing influence. We have no interest in this subject beyond laying the facts before our readers. In regard to the merit of the system, that is a point on which there will be a wide difference of opinion among professional men. We think it desirable to give it a trial on our "natives," and have planted the vines accordingly. We "go in" for progress, and if there is any merit in a new thing, we have always aimed to find it out speedily. The objection to close planting will not hold good, at least in the grapery. Charles Butler, Esq., has a grapery 500 feet

long, in which the vines are planted two feet apart, and fruited annually. The grapes in that house, for size of bunch and berry, quality, &c., are equal to the best we ever saw, and far above the average in these respects. His gardener, Mr. Ellis, it is true, is a skillful man, but that is an excellence which all gardeners should possess. It is just such men as Mr. Ellis and Mr. Chorlton that we should like to have try the single stem renewal system, as applied to the vineyard. By the time they get that fairly under way, we shall have another to propose to them from a different quarter. Any reasonable thing we feel bound to try.—Ed.]

IS THE SEED A NECESSARY PART OF THE FRUIT?

BY A YOUNG POMOLOGIST.

The theory of some horticultural writers, that in the most of our cultivated fruits the *fruit* is but a swollen capsule, inclosing the true fruit, the seeds, always seemed to me sufficiently reasonable to be accepted without much investigation; and the occasional occurrence of a variety of which the seeds are generally abortive, did not appear worthy of being received as aught but an exception. This season, my adherence to the theory has been severely shaken by the circumstance which I am about to relate.

It may not have escaped your memory, Mr. Editor, that in June last (1859) a frost of terrible severity devastated orchards and gardens to an extent rarely experienced. I at first was not alarmed for my fruit, a cursory examination satisfying me that the most of the crop was safe; but being incited to a more thorough investigation by the fearful reports of my neighbors, I was appalled by the conclusion which forced itself upon me. Upon cutting transversely through the cores of a large number of apples and pears, I found a very small proportion apparently sound—on some trees, scarcely any; of the remainder, the core was blackened, and the seeds, to all appearances, quite destroyed.

I at once gave up for lost the greater part of my crop, and expected to see the young fruits shortly dropping from the trees, leaving but an occasional specimen. Many did so fall, but I was surprised at the quantity which remained, although I did not fairly allow myself to be convinced that they were safe, until the season was far advanced.

The summer varieties were shortly approaching ripeness, and I found a large number of pears, when fully mature, wonderfully gritty at the core: so woody were they, that to cut one across was nearly as difficult as to sever a branch.

Attributing this, of course, to the action of the frost, I expected to find the later varieties similarly affected; but in this I was pleasantly disappointed. Pears, as a general thing were rarely finer, and even on trees where I had scarcely found any sound specimens, there was a fair crop. Even many of the fragments left attached to the tree after amputating the larger portion, swelled to a fair size and ripened well, although there was but the vestige of a core, no entire seeds (usually none at all) remaining. These specimens bore some resemblance to an obtuse fig, the dissected portion cicatrizing with a brown scar, and the cut edges closing over with a rounded lip.

This fact seems to me to conflict with the theory before mentioned, and would appear to indicate that a fruit is a *fruit* after all, and *not* a capsule, fleshy or not fleshy. If the existence of the fruit is secondary to that of the seed, why should the former swell and ripen, without the presence of the latter?

Grapes, when the seed fails to set, rarely swell to any extent; I had many bunches spoiled for this reason by the frost. And I had sent me a most beautifully formed miniature bunch of Hamburgh, in which there was not a seed, nor was there a berry much larger than duck shot, yet all perfectly colored and ripened.

These injuries were undoubtedly the result of cold acting upon the flowers, when about setting, and I do not see why the pear fragments should swell and the grapes not do so, except for the reason that the pears were injured *after*, and the grapes *before* setting.

I should like to see the opinions of yourself, Mr. Editor, and any of your correspondents who have investigated these points, for I do not remember any authority which quite covers the case.

[A "Young Pomologist" has opened an interesting question, which some of our readers may feel disposed to discuss, especially in its botanical bearings, which we may refer to again. *Pomologically*, we do not consider the seed a *necessary* part of the fruit, though generally present; for we have seedless Grapes, Oranges, Persimmons, &c., and it may not have escaped the notice of our young friend, that the effect of high culture and hybridizing is to reduce the number and the size of seed in fruit generally. We think the influence of the frost will sufficiently account for the small size of his grapes, without recurring to the absence of seed. We have now before us some samples of Black Hamburgh Grapes from Mr. Ellis, in all respects beautiful; bunches weighing two pounds, berries large, well colored, with a very handsome bloom, all indicating a high degree of culture; but not one berry in six has a seed in it; and this fact we have often noticed in the best grown grapes. If a "Young Pomologist" will direct his observation to points like these, we think he will find additional testimony that "the seed is not a necessary part of the fruit." We hope he will do so, and let us know the result.—Ed.]

VIBURNUM NITIDUM.

In our account of the April exhibition of the Brooklyn Horticultural Society, we spoke of a *Viburnum nitidum*, shown by Mr. Menand, as being a "splendid plant." Our artist, Mr. Hochstein, being present, we requested him to make a drawing of it, which we now give to our readers. We applied to Mr. Menand for the age of the plant, telling him of our purpose to "do it up," and his reply rather surprised us: "The 'knowing ones' would only laugh at you and me if we should say anything about such an old plant." We have a better opinion of them; and we only mention the circumstance to say, that if there are any among the "knowing ones" so ill-mannered, we can promise to keep them "on the grin" till they get tired of it. The plant is an old one, undoubtedly, but such specimens are as rare as the plant is common. We present it as a specimen of skillful and judicious culture, and as such valuable to our young readers as a standard to which they can direct their best efforts. The present specimen is about fifteen years old.



VIBURNUM NITIDUM.

The naked stalk is about four feet high; the whole plant about nine feet high. The head of the plant is over *twenty-two* feet in circumference, very symmetrically formed, and at the time we saw it was well covered with bloom. The natural size of the leaf and flower is shown in the engraving. The plant is now the property of Charles Durant, Esq., of Brooklyn, having been purchased by him at the close of the exhibition. We commend it to the notice of our young friends as a good example of what can be done, and hereafter we shall tell them how to do it. It may probably enlighten some of them a little to say, that the Viburnum nitidum is the shining-leafed *Laurustinus*, a great favorite with the ladies, and deservedly so.

A PLATE OF CHERRIES.

See Frontispiece.

Our *Frontispiece* for the present month represents a group of Cherries, some of which are so well known as hardly to need further illustration. Some of the names we should have preferred to change, if the plate had not been already printed; we must therefore be content with them as they are. We must add, too, that some of the figures in the plate are not equal to the originals, and fail to give an accurate idea of them.

1. Early Swedish, or, more properly, *Early White Heart*, which is the name, also, by which it is generally known. It is a good old early variety, though not equal to some others of the same season. The fruit is below medium size, oblong heart-shaped, sometimes a little one-sided. Suture quite distinct. Stalk an inch and three-quarters long, rather slender, and inserted in a wide, shallow cavity. Skin a dull whitish yellow, tinged and speckled with pale red in the sun. Flesh half tender, but when fully ripe melting, with a sweet and pleasant flavor. Ripe about the first of June.

2. *Triumph of Cumberland.*—The figure in the plate is not quite large enough. Fruit obtuse heart-shaped, sometimes roundish. Skin deep crimson, but nearly purple when fully ripe. Stem rather long, slender, and inserted in a broad, open cavity. Flesh rather solid, red, and slightly adhering to the stone. It is considered an excellent cherry. Ripe about the middle of June.

3. *Baumann's May*—Fruit rather small, oval heart-shaped, and rather angular in outline. Stalk an inch and three-quarters long, pretty stout at both ends, and set in a very narrow and rather irregular cavity. Skin deep rich red, becoming rather dark when fully ripe. Flesh purplish, tender, juicy, and when fully ripe tolerably sweet and good. Ripens about the 20th of May, and is very productive.

4. *Black Tartarian.*—The figure in the plate is an imperfect representation of this old and popular cherry. Fruit of the largest size, heart-shaped, irregular and uneven on the surface. Stalk long and stout, inserted in a large cavity. Skin glossy, purplish black. Flesh purplish, half tender, and juicy, with a rich and delicious flavor. It ripens about the middle of June, and is very productive.

5. *Bigarreau Monstreuse de Mezel.*—This was not long since introduced from France. The figure is under size. Fruit very large, obtuse heart-shaped, surface uneven, dark red, or quite black at maturity. Stem long and slender. Flesh firm and juicy, but not high flavored. Ripe last of June and beginning of July.

6. *Black Eagle.*—The figure in the plate is imperfect. Fruit above medium size, obtuse heart-shaped, borne in twos and threes. Stalk of medium length, and slender. Skin deep purple, or nearly black. Flesh deep purple, tender, and juicy, with a rich and high flavor. Ripens early in July, and is moderately productive.

MORE ABOUT THE DANDELION.

BY S. B. BROPHY, BROOKLYN, N. Y.

Mr. Stauffer having given a comprehensive account of the dandelion in the June number of the Horticulturist, I desire to add a word on that useful plant.

It is not "a Native American," and is known chiefly to professed botanists to be of European origin ; by means of its feathery seeds, when separated from the disk, floating in the atmosphere, it is able to travel an immense distance.

Refined observations, particularly with the microscope, on portions of the atmosphere filtered through water, very often unfold a most motley group of travellers, among which are found the pollen of plants in large quantities, from an unknown distance, as none of the family were found where the observations had been made.

In a uniform state of the atmosphere, precipitation being prevented by the earth's motion, the myriads of floating travellers that come unsent for, are silently emigrating from one part of the globe to another, and thus we have the dandelion and other flora of the Old World, facing to the American continent, like members of the human family—many of them doing better here than at home.

Much has been said of the medicinal qualities of the dandelion, but chiefly of its root. I have known the Dublin Medical Faculty to have saved the life—or rather to have given length of days to many a consumptive by its use ; but the prescription was, pounding the leaves in a mortar and squeezing its juice—dose, a wineglass full every morning.

Little has been done towards the cultivation of the dandelion, yet it is highly susceptible of improvement. Some three or four years since I brought from the open fields in spring-time a few plants of it, and planted them in the garden. They grew amazingly, so much so that they greatly exceeded my powers of consumption ; and with a view to retard the growth, and therefore the bitterness of its leaves, I tied them together with a cotton thread and drew the earth up around them, and as they grew I kept the earth up to them just as I would blanch celery. The result was, in a few weeks the leaves thus covered became beautifully white, and instead of the coarse, bitter taste of the leaf when exposed to the open air, its crispy flavor was more like celery than dandelion. Its early appearance in spring gives it value as a vegetable, and if blanched as it grows, it will fully repay the labor and care bestowed upon it.

Last month I gathered a small quantity of its seeds, and sowed them in drills a foot apart in the garden in the manner of lettuce, and not knowing how they would germinate, I put a few lettuce seeds in each drill to show how the land lay, in case weeds should become troublesome, and now the lettuce and dandelion are equally forward, with promise of a fine crop of dandelion, upon which I intend to bestow the most distinguished consideration.

EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, &c., intended for the perusal of the Editor, and packages by Express, should be directed to the care of C. M. Saxton, 25 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."

WE have received from friends a number of new and choice plants and seeds for trial, and shall discuss their merits from time to time as they come into flower. To save time, we desire to make our acknowledgments here. From Mr. Buchanan, New York, new Verbenas, Petunias, Gladioli, Ipomeas, &c. From Mr. Bliss, Springfield, Mass., new Verbenas, Petunias, Crassulas, Phloxes, &c. From Mr. Bridgeman, New York, new Dahlias, Heliotropes, seeds, &c. From Mr. T. Hogg, New York, new Tomatoes, Scarlet Egg Plant, Spergula pilifera, &c. From Mr. Quinby, St. Johnsville, N. Y. Taylor's Bullitt Grape. From Mr. P. Henderson, Jersey City, the new Chinese Pinks. From Mr. J. Henderson, Jersey City, new Fuchsias and Verbenas. From Messrs. Thorburn & Co., New York, a fine collection of seeds of new plants. From McIlvane and Young, New York, another collection of seed.

BOTH SIDES OF THE GRAPE QUESTION: comprising, I. An Essay on the Culture of the Native and Exotic Grape, by William Saunders, Germantown, Pa.—II. Physiography in its Application to Grape-Culture, by F. J. Cope, of Greensburg, Pa.—III. A Contribution to the Classification of the Species and Varieties of the Grape-Vine, with Hints on Culture, by J. M. McMinn, of Williamsport, Pa.—We have not been able to give this little volume more than a cursory examination, and shall only allude to it briefly at present. Part I., by Mr. Saunders, is the only really practical portion of the work. His directions for propagating and growing the vine are full and satisfactory, and give a decided value to the work. He presents some good plans for graperies, giving a preference to the fixed roof, and very properly. He also recommends inside borders and close planting; and in regard to the former, we take occasion again to commend them emphatically, especially for the forcing house. He falls into a grave error, however, in saying that inside borders will not require a thorough watering more than once in *six weeks*, even during the most active period of vegetation. During more than fifteen years' experience, we have found a pretty copious watering indispensable *every day* till the vines get sufficient age to shade the house, and after that about once a week. Local causes will somewhat modify the practice, but under any circumstances the floor of the house should be well sprinkled every day. We have lessened the labor of watering by contrivances which we shall figure hereafter. But even with a thorough watering daily, we should, as a general thing, prefer the inside border. Mr. S. gives the Delaware rather a cold shoulder. We are sorry the printer should not have done his part of the work better: he converts Mr. S.'s "feet" into "inches," his "bunches" into "branches," &c., &c.—Part II., on Physiography, is by Mr.

Cope. This is a well-written effort, but the author's propositions, on the whole, we dissent from, and shall take occasion hereafter to review them in detail.—Part III., on Classification, is by Mr. McMinn. This is a subject well calculated to task a man's best efforts. We shall probably differ considerably from the author in his classification, but we can not do him justice with only the slight examination we have been able to give his essay. We must look at it more at leisure. In the mean time, we must express our surprise at his list of grapes which he says are considered "very best" in different states. He is certainly entirely at fault as regards New York.

HARPER'S NEW MONTHLY.—The June number is quite equal to its predecessors. Contents: A Summer in New England—One year ago—Ancient Monuments in the United States—Insects belonging to the Cotton Plant—The Century Plant—Sullivan's Island, a Ballad of South Carolina—Froth—The First Overland Trip to California—"He was always such a Fool"—Lovell the Widower—"Miserable Man that I am"—Only Words—Monthly Record of Current Events—Literary Notices—Editor's Table, &c.

BLACK HAMBURGH GRAPES.—Mr. Ellis has just placed on our table some splendid Black Hamburgh Grapes. Some of the bunches weigh two pounds each; others a trifle less. The berries are finely colored, well ripened, with a handsome bloom, and are in all respects first rate. Mr. Ellis is "hard to beat" in growing grapes.

SEEDLING STRAWBERRIES.—A few days since, in company with Messrs. Saxton, Pardee, and Hite, we visited Mr. Fuller, to examine his bed of seedlings. We were much surprised at the large proportion of fine kinds contained in this bed, and marked a number of them as worth keeping. Some of them were of such decided quality, that we made drawings of them, which we shall hereafter present to our readers.

SUSQUEHANNAH AND CHEMUNG VALLEY HORTICULTURAL SOCIETY.—We are indebted to the politeness of the officers of this Society for a complimentary ticket to attend their Summer Exhibition, which took place at Havana, N. Y., on the 20th and 21st of June. A previous engagement alone prevented us from mingling with them on this pleasant occasion. We should be obliged to their Secretary for an account of the exhibition. We notice a commendable feature in their prize list, which ought to be more common, viz., a division of the competitors into amateurs and professional men. We append a list of the officers for 1860: *President*, Col. E. C. Frost, Havana; *Vice-Presidents*, Gen. R. B. Van Valkenburgh, Bath; Hon. Asher Tyler, Elmira; L. M. Rexford, Esq., Binghampton; Hon. E. S. Sweet, Owego; *Cor. and Rec. Secretary*, E. P. Brooks, Esq., Elmira; *Treasurer*, John M. Dexter, Elmira; *Executive Committee*, Harvey Luce, Elmira; N. Winton, Havana; D Decker, Elmira; T. L. Baldwin, Tioga, Pa.; F. H. Baldwin, Waverly; John M. Parker, Owego; Geo. Farnham, Addison; J. M. Dexter, Elmira; A. I. Wynkoop, Chemung; O. Spaulding, Waverly.

DINSMORE'S RAILROAD AND STEAM NAVIGATION GUIDE.—A reliable and indispensable hand-book for travellers and others. The price has been reduced to 15 cents, which places it within the reach of all.

THE SWEET POTATO CULTURIST.—This a small hand-book by J. W. Tenbrook, proprietor of the Parke Nursery, Rockville, Indiana, containing practical directions for cultivating, marketing, and preserving the Sweet Potato, and embracing the experience of a large number of growers. It is a useful little book.

THE CRANBERRY CULTURIST.—This is a very useful compendium by Mr. W. H. Starr, of New London, containing practical directions for the culture of the plant, descriptions of the best varieties, and other necessary information relating to flooding, selection of kinds, &c.

THE name that you want, Mr. Henderson, is B. Stratton. This is the only way in which we can answer your inquiry, since you, like many others, failed to send your post-office address.

SEEDLING GRAPES.—"It never rains but it pours;" which is just now true of Grapes. From almost every quarter friends write us about the number of seedlings they have, and what they expect from them. A goodly number will certainly be disappointed, but we shall doubtless in the end obtain a few choice kinds. Dr. Wylie, who has been hybridizing with a specific object in view, writing from Chester C. H., S. C, says: "I have about three hundred seedling grape-vines growing finely, composed of all our best natives, fertilized with the best foreign. The most interesting are the Delaware and Scuppernong, crossed with the foreign; the former with Black Hamburgh, Syrian, and Muscat of Alexandria, and the latter with the Royal Muscadine. The seedlings clearly show the cross by their foliage, which is most striking. This year I have gone into it extensively. I am inarching some of my seedlings on strong stocks, and expect to force them into bearing next year."

THE WAY TO STOP A PAPER.—The following from the *Urbana Citizen and Gazette* will do to pass round. "If you wish to stop a paper, pay for it in full to the time when you cease taking it, as an honest man should do. Don't go sneaking to the postmaster, and tell him to send your paper back 'refused,' but send your bill, deposit the amount with the postmaster, and ask him to forward it; or what is a much better way, go to the office of publication yourself, and pay your honest dues like a man. Some people complain that they *can't* stop a paper they have once subscribed for, but there is no difficulty in it if you take the right way. Pay up all you owe, and then if the paper be continued contrary to your orders, you are not liable for it. Don't undertake to cheat the printer out of his due, whether it be ten cents or ten dollars. You have had the benefit of his labor, and are bound, upon every principle of justice and fair dealing, to pay for it."

STRAWBERRIES.—We are indebted to Mr. Fuller for several baskets of Strawberries, very large and fine, embracing *Brooklyn*, (a very fine seedling,) *Reine Hortense* (a new variety of large size and fine flavor,) *Vicomtesse Hericart de Thury*, *Wilson's Albany*, *Scarlet Magnate*, *Brighton Pine*, *Hooker's Seedling*, and some older kinds. We should be doing great violence to our feelings if we failed also to acknowledge from Mrs. Fuller a large and delicious *Strawberry Short Cake*, for which she will please accept our best thanks. A number of friends happening in at the moment, the cake afforded us an opportunity of getting up an impromptu Strawberry festival. The affair went off finely, with the customary vote of thanks to Mr. and Mrs. Fuller for the bountiful repast. Mr. Hite will also accept our thanks for very fine Wilson's Albany.

THE AUSTIN STRAWBERRY.—This, up to our last moment of writing, (the 20th,) has not been sent to our office, from which the reader can draw his own inference. We saw the fruit, however, at the Farmers' Club, a few days since, and found it to be of large size, but somewhat soft and deficient in flavor. How it will compare with the Wilson for productiveness we can not say positively.

HORTICULTURAL SOCIETY OF MORRISANIA.—This young Society, we learn from the Secretary, Mr. Willcox, recently held a meeting, at which they elected their officers, and appointed the 3d and 4th of October for their Fall Exhibition. David Milliken was elected President, and W. W. Fox, Adrian Janes, C. Moger, R. L. Anderton, and Benjamin M. Whitlock, Vice-Presidents. William H. Willcox, Recording Secretary, J. L. Parshall, Treasurer, and James Stillman, Librarian. We, it seems, were elected Corresponding Secretary, though we have heard nothing of it yet. At the rate at which they are "doing us up," we shall next expect to hear that we have been made R. S. or something else of the Horticultural Society of the Sandwich Islands. It would be just as convenient.

QUEEN'S COUNTY AGRICULTURAL SOCIETY.—The nineteenth Annual Exhibition of this Society will be held at Jamaica, on Wednesday, the 19th of September. The Judges for the various departments have been appointed, but the prize list has not yet been completed.

SAVING SQUASH SEED.—Many plans have been suggested for saving Squash and Melon seeds pure. The following, furnished to the *Rural New Yorker* by the Rev. Mr. Langstroth, would seem to be a good one. The process might be simplified by tying the ends of the blossoms together with a string.

"Rise in the morning by break of day, before the bees are abroad. Select a number of female blossoms which have opened during the night. They may be known by growing on the end of the young squash, melons, &c., while the male blossoms ('false blossoms,' as they are called) have no fruit. Scatter the pollen of the male blossoms upon the stamens of the female ones, and carefully cover the latter with millinet, or anything which will protect them from the visits of the bees. A piece of cotton cloth, or even a squash leaf, kept in place by a few clods of earth, will answer a good purpose. When the blossom withers the covering may be removed, and the fruit marked by a colored string tied loosely around the vine.

The post-office address of Mr. Willcox is box 348 instead of 365.

THE JAVA COFFEE POT.—We have now given this a fair trial, and find it to be a really good thing; it is a considerable economy, too, and we are content with it.

EARLY PRINCE IMPERIAL RHUBARB.—We received a box of this new Rhubarb from Messrs. Barnes and Washburn, of Dorchester, Mass., and have given it a trial. The stalks are not large, but are of a pretty ruby color, tender, with a mild, pleasant flavor.

PROGRESSIVE GARDENER'S SOCIETY.—We have received the Rules and By-laws of this Society, with a list of the members, &c. The officers for 1860 are as follow: *President*, William Saunders. *Vice-President*, William Grassie. *Secretary*, R. Robinson Scott. *Treasurer*, John Gurney.

CALIFORNIA CULTURIST.—We are now in regular receipt of this well-printed and well-edited monthly. It gives a good indication of the progress of Horticulture in California, and we hope is being generously supported.

CALIFORNIA FARMER.—This is another California friend which we welcome to our "table." The farming interests of California are well cared for by Col. Warren, and we hope he is well cared for in return.

EASTERN FARMER.—This is a new weekly, which has just made its appearance at our "table." It is published at Ellsworth, Maine, by Messrs. Wasson and Moor. Samuel Wasson, Editor. Price $1 per annum.

THE ATLANTIC MONTHLY.—The June number of this sterling monthly is at hand. Contents: The Future of American Railways—In a Fog—The Granadian Girl's Song—The Humming Bird—Chess—Spring Song—Model Lodging Houses in Boston—A Short Campaign on the Hudson—Thine—The Representative Art—Roba di Roma—Pythagoras—Clarian's Picture—Japan—The Vineyard Saint—The Professor's Story—The Sphinx's Children—Reviews and Literary Notices, &c. But why does the Atlantic write us down the Horticultur*al*ist? Elsewhere it would not look quite so bad.

AMERICAN POMOLOGICAL SOCIETY.—We have received the following Circular from President Wilder; its importance will claim for it the attention of every pomologist in the country.

The work of the society will be greatly promoted, and its labors much simplified, by complying with the suggestions of the circular, and we hope this will not be overlooked.

CIRCULAR.

The Eighth Session of this institution will be held in the city of Philadelphia, commencing on the 11th of September next, at 10 o'clock A. M., and will be continued for several days.

This Society, the first National Institution for the promotion of Pomological Science, was organized in the year 1848. Its sessions have brought together the most distinguished cultivators of our country; its transactions have embodied the various researches and ripest experience, and its Catalogue of Fruits has become the acknowledged standard of American Pomology.

Its example has created a general taste for this science, inspired pomologists with greater zeal, and called into existence many kindred associations. Its progress has been remarkable and gratifying, but it still has a great work to perform. Its general catalogue should, from time to time, be enlarged and perfected, and local catalogues formed, embracing the fruits adapted to each State and Territory of the Union. The last of these suggestions was made by the Chairman of the General Fruit Committee, at the seventh session of the Society, in the year 1858. This has been carefully considered, and is deemed worthy of special attention. It is, therefore, earnestly recommended that each State Pomological, Horticultural, or Agricultural Society, charge its Fruit Committee with the duty of collecting information, and presenting the same, with descriptive lists of Fruits adapted to their location.

The importance of this subject, and the increasing value of the fruit crop of the United States, call for a prompt and cordial response to this request, for a careful preparation of said list, and for a full and able representation, at the approaching session, from all parts of the country.

The various State Committees of this Society are expected to submit accurate and full reports of the condition and progress of fruit culture, within their limits, together with definite answers to each of the following questions. These reports, it is desirable, should be forwarded to the Chairman of the General Fruit Committee, Hon. Samuel Walker, Roxbury, Mass., if possible, as early as the 1st of September, or to Thomas W. Field, Esq., Secretary, Brooklyn, New York.

What *six*, *twelve*, and *twenty* varieties of the apple are best adapted to an orchard of *one hundred* trees, for family use, and how many of each sort should it contain? What varieties, and how many of each, are best for an orchard of *one hundred* trees, designed to bear fruit for the market?

What *six* and *twelve* varieties of the Pear are best for family use on the Pear stock? What varieties on the Quince stock? What varieties, and how many of each of these, are best adapted to a Pear orchard of *one hundred* or of *one thousand* trees?

What are the *six* and *twelve* best varieties of the Peach? What are the best varieties, and how many of each, are best adapted to a Peach orchard of *one hundred* or of *one thousand* trees?

Answers to these questions should be made from reliable experience, and with reference to the proximity or remoteness of the market.

Held, as this convention will be, in a city easily accessible from all parts of the country, it is anticipated that the coming session will be one of the most useful the Society has ever held. Societies, therefore, in every State and Territory of the Union, and the Provinces of British America, are requested to send such number of delegates as they may choose to elect. Fruit-growers, Nurserymen, and all others interested in the art of Pomology, are invited to be present—to become members, and to take part in the deliberations of the Convention.

In order to increase as much as possible the interest of the occasion, members and delegates are requested to forward for Exhibition as large collections of fruit as practicable, including specimens of all the rare and valuable varieties grown in their respective districts, and esteemed worthy of notice; also, papers descriptive of their mode of cultivation, of diseases and insects

injurious to vegetation, of remedies for the same, and to communicate whatever may aid in promoting the objects of the meeting. Each contributor is requested to make out a complete list of his contributions, and present the same with his fruits, that a report of all the varieties entered may be submitted to the meeting as soon as practicable after its organization.

Societies will please transmit to the Secretary, at an early day, a list of the delegates they have appointed.

Gentlemen desirous of becoming members can remit the admission fee to Thomas P. James, Esq., Treasurer, Philadelphia, who will furnish them with the transactions of the Society. Life Membership, twenty dollars; Biennial, two dollars.

Packages of fruit may be addressed to Thos. P. James, 639 Market street, Philadelphia.

THOMAS W. FIELD, Secretary, *Brooklyn, New York.*

MARSHALL P. WILDER, President, *Boston, Mass.*

THE PROGRESSIVE GARDENER'S SOCIETY, PHILADELPHIA.—This Society holds stated meetings for the discussion of subjects pertaining to Horticulture, and it would be well for the cause if all similar Societies held meetings for a like object. These discussions, in many instances, possess more than a local interest, and are worthy of a general perusal, and we therefore place a portion of them before our readers. We are indebted for them to the Secretary, R. Robinson Scott, who will please accept our thanks. The subject at the last meeting was "*Heating Glass Structures.*" Elsewhere we also print a discussion on *Manures.*

The subject of heating by hot water had been set apart for consideration for this evening, but the essayist, whose duty it was to introduce the subject, was absent. The general subject of heating glass structures was very fully discussed, notwithstanding.

William Saunders, acceding to the request of several members, opened the discussion by excusing himself from presenting any specific branch of the subject; he had not recently studied the various methods of heating. Great progress has been made, even in his own time, in the introduction of heat artificially to plant houses. The *brick flue* was the rudest mode known to him, which was not without its advantages, and he could not wholly discard it. One objection to it was waste of fuel and the production of an unequal heat over the house. The method of heating by hot water was a great improvement on the flue, as water was one of the best conductors of heat, while air was one of the worst. The hot water system economizes fuel and gives out a regular heat; these are its two great advantages. It is also more easily controlled by the cultivator. Much of its efficiency depends, however, on the style of boiler and quantity of heating surface exposed to the fire. We still want a perfect boiler, as all those invented, or in use as known to me, are imperfect, and I have seen most of them either in use or have read descriptions of their peculiarities. We still want a boiler which will present a larger heating surface to the fire. The old saddle boiler was one of the first forms; at present we have Weeks's cumbersome apparatus, and Burbridge & Healy's, with several others. One of the most convenient and economical boilers I have seen, was that invented by Stephenson, made of copper; it is very quick in operation, but has not been introduced here. A system, consisting of a series of small pipes, was in use, around which the fire played; but the defect in this was, that the pipes soon burned out, and it was subject to explosion. Boilers of the same form as those used for locomotives have also been employed to heat houses, and have answered well enough. There is a great saving effected by heating several houses with one boiler. This is managed by having a chamber into which the several pipes flow, and from this chamber the several houses are supplied, the connection being made or cut off by stop-cocks attached to the several pipes at this chamber.

T. Myers did not feel disposed to say much on this subject, being properly an interested party. He had no objections, however, to afford the members any information he possessed. (Throughout the evening he explained many points when questioned by the members.)

R. R. Scott commended the prudence of Mr. Myers. It might indeed be insinuated, under

other circumstances, that an interested motive existed; but associated as we are here, to increase our individual knowledge by imparting it in exchange for that of our fellow-members, we shall recognize no such insinuation as having any force. We have all had more or less experience in this matter; what we aim at is to benefit by the accumulated experience of all. This is a special department of Horticulture, and it is not to be expected that gardeners are intimately acquainted with the mechanical details; therefore we desire to be instructed by so competent a constructor as Mr. Myers.

Mr. Myers wished to urge the superiority of cast iron over wrought iron boilers. Tubular wrought iron boilers are now made, but they require renewal, as they wear out soon.

William Walter spoke of copper pipes being very effective, and much used in Paris in graperies. The apparatus is made so portable that it is removed in spring and replaced towards winter. He had used a method of heating by hot water, which differed from others; he applied it to a forcing pit. It consisted of a sheet iron pan, twenty feet long, to which were connected leaden pipes, and covered on top with boards; over these boards tan was placed, and on the tan the soil. This system afforded a moist heat very congenial to plants; and in this pit he had raised fine cucumbers in the middle of January, without establishing the plants in pots. This is a modification of the tank system.

William Saunders.—Copper pipes had their advantages. They become heated rapidly, but part with the heat as rapidly. A house can be heated in a comparatively short time by copper pipes. Tanks had been in use, but the difficulty of making them perfectly tight was a defect, and they have been discarded. The escape of steam was also an objection, as it was injurious to plants in many cases. Tanks might be used in connection with pipes.

Walter Elder.—I have had but one opinion on the various systems of heating, and my preference is for hot water. I would have the old system universally abandoned, of carrying the smoke through the house in brick flues, sheet iron pipes, or earthen-ware cans, especially in private establishments. The heat from these is arid and injurious to many kinds of hard-wooded plants, such as the Camellia, Azalea, Acacia, Epacris, Erica, &c., &c. These suffer from it in severe winters. Frequently, though you may syringe, the soil in the bottom of the pots becomes as dry as dust, while the surface may be quite moist, at least those pots standing on the shelves and front tables. The heat from hot water pipes is more congenial to plants, and diffuses itself more equally throughout the house; so much so, that it is scarcely perceptible whence it proceeds. A proof of its suitableness may be found in the fact that the dew remains much longer on the leaves where hot water is employed. The sulphur and other disagreeable smells, perceptible in houses heated by the flue, are evidence of the great advantage of hot water over the old flue system.

James Eadie would not entirely discard flues, but would employ both systems in connection, by carrying the smoke channel along the house. If the flue is properly constructed, little gas can escape. The method of having the fire surrounding the pipes is dangerous, as was ascertained in the case of the Great Eastern. Saddle boilers in some cases work very well, and cannot be condemned. There is a great defect in setting Burbridge & Healy's boiler, so far as eighteen or twenty inches above the furnace, rendering much more coal necessary to raise the heat. Could see no reason why a plate of cast-iron should not take the place of brick in setting the boiler, thus connecting the *rest* for the boiler, with the boiler itself; apertures could be left at the sides for the escape of the fire to the sides of the boiler.

Mr. Myers, in reply to a question as to the effect of dipping the pipes below a doorway, for instance, stated that it had better be avoided, if possible; yet that under certain restrictions the boiler would act, but at a disadvantage; the higher the pipes above the boiler, the more effectual and easier the current.

James Eadie.—The idea that the dipping of the pipe is new, was quite erroneous; it had been practised in England years ago, as well as in this vicinity, in Montgomery county.

Mr. Pollock made some remarks in corroboration of this position. Several other members recorded their experience, when the subject was laid on the table for future consideration.

The usual hour of adjournment not having arrived, the subject of "*Indigenous and Exotic Grapes*" was, on motion, taken up for discussion; quite a lively and interesting conversational debate ensued, which was participated in by Prof. Stephens, William Saunders, James Eadie, James Jones, H. Pettigrew, R. R. Scott, and others. We must reserve a report for another occasion.

Members elected. *Honorary:* Dr. John A. Kennicott, Chicago; James Bisset, Sr., Washington, D. C.; William Graham, Blockley. *Resident:* J. F. Knorr, William Anderson, gardener to J. N. Dickson, Esq.; Hugh Pettigrew, West Philadelphia.

The subject set apart for May 14th is "*Manures.*"

BARTLETT'S POLAR REFRIGERATOR.—We know this as an excellent invention for domestic use, but it has occurred to us that it might be valuable for keeping summer fruits, its cool dry atmosphere being favorable for that purpose. Have any of our readers tried it?

CATALOGUES AND BOOKS RECEIVED.

Illinois State Fair for 1860. Premiums and Regulations for the Eighth Annual Exhibition of the Illinois State Agricultural Society, to be held at the City of Jacksonville, on the 10th, 11th, 12th, 13th, and 14th days of September, 1860. Competition open to the world, except as noted in the Premium List.—A very liberal prize list, $15,000 being offered in premiums.

Wholesale Catalogue, or Trade List, of Fruitland Nursery, Augusta, Ga., for the Fall of 1860 and Spring of 1861. By P. J. Berckmans.—This is a circular for the trade or large purchasers.

The Presbyterian Parlor Magazine, a monthly Journal of Science, Literature, and Religion. Alfred Nevin, D.D., Editor. June, 1860.—This is the first number of a new monthly, the net profits of which are to be appropriated for the benefit of disabled ministers, and needy widows and orphans of deceased ministers of the Presbyterian Church. It is well printed, and has an able corps of contributors.

Monthly Record of the Rensselaer County Agricultural and Manufacturers' Society. Troy, June, 1860.—The object of the Monthly Record is to publish the doings of the above-named Society, and to collect and diffuse knowledge having a bearing on its objects. It may be made the instrument of much good.

Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, Roses, Greenhouse and Bedding-out Plants, cultivated and for sale at the Great Western Nurseries, Toledo, Ohio. F. Prentice, Proprietor.—A full and well-prepared Catalogue.

Wholesale Trade List of the Hickory Grove Nurseries, for the Fall of 1860 and Spring of 1861. Hall & Co., Proprietors, at the head of Broadway, two miles above the Oliver House, Toledo, Ohio.

The Journal of Rational Medicine. Edited by C. H. Cleaveland, M. D. June, 1860.

The Mother's Magazine and Family Circle. Rev. B. J. Relyea, Editor and Proprietor. June, 1860.

A Practical Treatise on the Management of Fruit-Trees, with Descriptive Lists of the most valuable Fruits for General Cultivation; adapted to the Northern States. By George Jaques.—Notice in our next.

A Dictionary of the English Language. By Joseph E. Worcester, LL. D. Boston: Swan, Brewer, and Tileston.—Notice in our next.

Correspondence.

DEAR HORTICULTURIST:—On Thursday last, the 7th inst., I enjoyed an opportunity of attending one of the monthly meetings of the "Meramec Horticultural Society," held at the residence of L. D. Votaw, Esq., near this village. The day was beautiful, and the society was convened under the broad-spreading branches of a magnificent native elm, on the bank of the Mera mec iver.

The meeting was presided over by J. C. Blakey, Esq., the President, Dr. A. McPherson, of Allenton, being absent on account of illness. There was an exhibition of a few early vegetables and small fruits, a few fine bouquets of flowers, and some clusters of a native wild plum, said to be of good quality, medium size, exceedingly prolific; and being quite thick skinned, the persevering attacks of the curculio are as harmless upon it as they would be upon a pumpkin. The subject for the day was, "The proper management of a young apple orchard," which elicited a good deal of discussion, and some information.

But the feature of which I wish particularly to make note, is the *social* character of this society. The family of each member is entitled to all the privileges of the society, except in a business point of view; the meetings are held at the private residences of the different members, all hands turn out to attend, participate in, and listen to the discussions, have a good dinner, and I "reckon" have "a heap" better time than you do down in New York at one of your formal parties. Would it not be advisable to engraft this "social feature" into all similar societies? I'm sure it would be a great subduer of vice, and promoter of virtue and social happiness. There is increasing attention being paid in this State to the various agricultural improvements of the day, and particularly to fruit-growing, and Norman J. Coleman, Editor of the *Valley Farmer*, published at St. Louis, Mo., at $1.00 a year, is taking no mean part in bringing these improvements to the notice of the inhabitants of his State, and inducing them to adopt them. A large portion of this country is new, and the wants of the inhabitants few, and "hog and hominy" will principally supply them; but wherever railroads have opened a communication with the rest of the world, they see they are clear behind, and are taking hold with a will to "catch up" and go ahead if possible.

Horticulture is sadly neglected; even in St. Louis we see the want of knowledge and cultivated taste wherever any attempts have been made at improvement in this department. If there were a thousand copies of the HORTICULTURIST studied where one is taken now, there would be a vast improvement in this respect in a few years, and it would be a *capital investment* both for publisher and people.

When I learn more of the "capabilities" of this State for *fruit-culture*, the advantage and disadvantage of climate, soil, aspect, &c., you may expect to hear from me again. Yours truly,

Eureka, St. Louis Co., Mo., June 11th, 1860. E. S. HOLMES.

P. S. An honest, honorable, scientific, and practical Landscape Gardener would find a good location in St. Louis. E. S. H.

[They do some things at the West much better than we. We approve heartily of the "social feature" alluded to by Mr. Holmes, and think that it might be adopted by our suburban societies with the happiest results. It would exercise a beneficial influence in controlling the petty envies and jealousies which so often mar and destroy their usefulness; and it would also greatly promote their social well-being. We are vain enough to believe that a free circulation of the HORTICULTURIST at the West would do much to develop and fix the public taste in all matters pertaining to horticultural pursuits; and we have the satisfaction of knowing that it is making its way there, but not to the extent that it should. We are glad to know that our brother Editor of the *Valley Farmer* is doing a good work there, and wish him abundant success.

We should like to know, Mr. Holmes, all you can learn about the capabilities of your State for fruit-culture. The P. S. will probably catch the eye of some of our Landscape Gardeners, who would do well to think of such an opening.—ED.]

PETER B. MEAD, ESQ.,

DEAR SIR,—Allow me to endorse what your correspondent "W., Washington Heights," has said respecting the Gishurst Compound.

Previous to the public announcement of this remedy Mr. Wm. Elliott, seedsman, of 31 John St., New York, gave me a portion, before recommending it to his customers. I tried it in different ways, and on several kinds of plants, and found that, dissolved in the proportions of from two to three ounces to the gallon of water, it was instant death to Thrips and Red Spider, and also quite effectual in extirpating mildew on roses and other plants in the greenhouse. It is a clean substance to use, and if it could be afforded cheaper, would, no doubt, become most extensively used for out-door purposes against all sorts of insects. Yours respectfully,

WM. CHORLTON.

[We can add our own testimony to the above. It is also good for the rose slug, or rather it is *bad* for him, and we suspect it will be found destructive to most of our plant insects. We should be glad to hear the result of other trials, in order that the extent of its value may become speedily known. We have caused it to be applied to a number of plum-trees, but it is too soon yet to speak decisively of the result. The price of the compound, however, will deter a great many from experimenting with it. It ought to be afforded for a much less sum.—[ED.

MORE ABOUT BOILERS.—DEAR SIR:—"A READER," in the June number of the HORTICULTURIST, page 291, asks for "facts and figures" on the efficiency of hot water boilers in statements addressed to you on the subject. Having sent you a communication on the saddle and conical boiler, which you had the kindness to publish in the May number, and to which he refers, I willingly state what I know on the subject.

As to the dimensions of the house, asked for by your correspondent, the slightest reflection will show him that there is no given rule on this point; in the present state of horticultural architecture, when no two men build alike, there can not be any. An amateur of means builds a house of taste and elegance, which is so far away from that which an intelligent practical gardener would build for his own use on the same area, that the practical man will heat his house and produce a better result with half the means which the owner of the more expensive structure would, and must of necessity, expend for his purpose.

I built my greenhouse three-quarter span, 130 feet long, 16 feet wide, 9 feet high in the centre, on the south side of my garden fence; back wall planked and filled in with brick on edge, 6 feet high, front wall two feet high, back rafters 4½ feet, front rafters 12 feet; sash bars on the fixed principle; ventilators over the ridge plate, as at Bridgeman's, 876 Broadway, New York; and yet practical men have told me that my house is not "half tight"—that to exclude the north wind and its consequences, I should have built the back wall of *concrete* eighteen inches thick, or a hollow brick wall of the same size. I know I could thus make a "tighter" house, but I know that the "practical men" are few in number who build alike, or pay the slightest attention to the laws of light and heat in horticultural buildings; and therefore it is, that the means that would heat one house, would not keep the frost out of another of the same size, in different hands.

A very skilful gardener in this city does business in a house 130 feet in length, of an L shape, 60 feet of which is span roof, 22 feet wide, 10 feet high; the remaining 70 feet is lean-to, 14 feet wide, and same height; the whole so loosely built as to do injustice to any mode of heating. It would do you good to walk into it in winter, in your flight from the wrath to come outside. He makes the water boil, and keeps a high temperature in this extent of house, *in times that try men's souls*, with No. 4 of the *saddle and conical boiler* and 526 feet of 4-inch pipe. The quantity

of coal burned from November to May was 8 tons, and when he had trimmed his lamp at night, he says he had no occasion to look to it until morning. I put this case as the worst I can find, against the saddle and conical boiler.

If your correspondent were a practical machinist, disposed to investigate matters every day under his eye, and engaged in the construction of boilers for horticultural purposes, I should most willingly submit to his consideration a few "opinions," a careful and intelligent investigation of which would lead to useful "facts and figures" touching his business; but as I take him to handle the hoe and rake as I do, with a view to oblige him I have called on Messrs. Weathered and Cherevoy, 117 Prince Street, New York, the makers and patentees of the saddle and conical boiler referred to, and they assure me they warrant their boilers with the following powers, assuming that the greenhouse is carefully and closely built, and not over 12 feet high. They also add that they have lately patented a boiler of greater power.

No. 5. Largest size, grate surface, 19 inches diameter, 283 square inches, will heat 800 feet of 4-inch pipe containing 434 gallons of water.

No. 4. Grate surface, 15 inches diameter, 176 square inches, will heat 500 feet of 4-inch pipe, 271 gallons of water.

No. 3. Grate surface, 12½ inches diameter, 122 square inches, will heat 300 feet of 4-inch pipe, 163 gallons of water.

No. 2. Grate surface, 9 inches diameter, 63 square inches, will heat 150 feet 4-inch pipe, 82 gallons of water.

No. 1. (Not yet constructed.)

To the makers of this very excellent boiler, I beg to refer any who wish further inquiry on the subject.

It may be useful to state, that 100 feet of 4-inch pipe contains 54 gallons of water; that 100 feet of 3-inch pipe contains 30 gallons; that 100 feet of 4-inch pipe is equal in effect to about 150 feet of 3-inch pipe, the capacity being in all cases in direct proportion to the square of the diameter of the pipe. Your obedient servant, B., OF BROOKLYN.

[In our next we shall give a letter on other boilers.—ED.]

EDITOR OF THE HORTICULTURIST:—I tried last fall, and again this spring, to secure a supply of Wilson's strawberries. The first hundred failed; of the second hundred, I have saved some fifteen. They were all from Rochester. So I am almost disheartened in the attempt at getting them from abroad. But, as I see that you are to have an exhibition of the Austin at the office of your valuable paper this season, I will have to call into requisition your judgment about its value. If the berry is really what it purports to be, and you think you can send me one dozen safely *by mail*, you will confer a favor by doing so at the right time.

I have a very fine *grape-vine*, which was taken from the roots of an old one which had been transplanted and died. The name I do not know. The bunches are long, heavily shouldered, bright red; the vine a luxuriant grower, a brownish color, leaves very large—lobed and sub-lobed—villous underneath, and very much wrinkled, and deep green on upper part. This vine bloomed last season very finely, and again this spring, but will *not set any fruit*. Why is it? It does not bloom for more than three weeks after my other vines. Let me know what is the matter, and how to remedy the evil.

Some of the very finest *nectarines* I have, when half-grown, *wilt* and fall off. I have a *Stanwick*, very young; it showed fine bloom, and set three *nectarines*, the largest of which, when nearly as large as a common hen's egg, wilted in forty-eight hours, without any apparent cause, and fell off: the other two seem to be doing finely. Why is this? The *Stanwick* seems to do well with me out-doors, better than a great number of other nectarines, and the finer peaches. But I do not understand this wilting of the Boston, Downton, and Stanwick. Why is it?

Yours truly, in great haste, M. S. FRIENON.

Columbia, May 26, 1860.

P. S.—Does the *striped bug*, that is so injurious to cucumbers and other vines, ever attack the nectarine? I find them in large numbers on the Boston, and the skin sometimes scarred. Is it these bugs? It is not the curculio.

[Only 15 out of 200 Wilson's Seedling! There must be something wrong with such results. What is the nature of your soil, and how did you prepare it?—We have seen the Austin, but think it would not suit you. It is large, but deficient in flavor.—We can not tell, from your description, what is the matter with your vine. Having been propagated from a fruitful vine, it ought to be fruitful like its parent. Are the flowers defective? Let us know *how*, and *where*, and in *what* you planted the vine.—The wilting and dropping of your nectarines we suppose to be caused by either the borer or the curculio, but probably the latter. But we suspect you have been applying some artificial fertilizer to your soil which has had much to do with all your difficulties.—Glad to hear that the Stanwick does so well with you; you can not plant anything better in that way.—The "striped bug" does sometimes attack both the Nectarine and the Peach. Try the Gishurst Compound on your insect enemies.—ED.]

Editor's Drawer.

PROGRESSIVE GARDENER'S SOCIETY.—This Society is doing a good work by its conversational meetings. The discussions thus far possess so much interest that we gladly make room for them, and hope they may be continued. The names of the officers we present elsewhere. The subject for discussion at the last meeting was *Manures*, and the following instructive essay was read by Prof. L. Stephens of Girard College.

The term manure is applied to all those substances which enrich the soil in those elements which contribute to support vegetation, and may perhaps with propriety, in a wider sense, apply also to those chemical agents which seem to liberate and render available to plants those fertilizing elements which already exist in the soil, but locked up in a state of insolubility, and may also embrace those substances whose application to particular soils improves their physical texture in such a way as to enable a crop to obtain abundant sustenance.

The organized tissues of all plants consist chiefly of four elements, three of which, in their free or uncombined state, are gaseous bodies viz., oxygen, hydrogen, and nitrogen, and the fourth, carbon, although in its simple state a solid, still in its union with oxygen forms a gaseous compound, carbonic acid, which is universally diffused, in the atmosphere, the water, and the soil. All of these elements, either as gaseous or liquid compounds, are universally diffused, and without the aid of man sustain the luxuriant growth of our forests and our prairies. Of these elements, three, oxygen, hydrogen, and carbon, constitute the vegetable tissue, or the entire framework of the plant, while nitrogen is invariably contained as an essential element in the seed, and appears to be indispensable to all vital action in the plant; for it is found not only in the seed, but in the cells of every growing part of the organism, as one of the constituents of that viscid liquid which lines the inner wall of the cell, and from which new cells derive their birth.

But besides these organic elements, there are found certain mineral constituents in the sap and cells of every plant, which are indispensable to its growth, strength, and health. These are potash, soda, lime, magnesia, oxide of iron, silica, phosphoric acid, sulphuric acid, and muriatic acid. While of the organic elements plants derive a large part of their supply from the water and the air, their mineral constituents must be derived wholly from the soil. Different crops require of these minerals different quantities and in different proportions. Thus, clover and

peas require a much larger amount of lime and less silica than grass or grain. And potatoes and beets require more potash and less sulphuric acid than turnips. Chemical analysis has fully proved that within a certain narrow range of variation, each crop must obtain from the soil its own particular proportion of these mineral constituents, and that the absence or the deficiency of any one of them will cause a failure of the crop. In the absence of manuring a cultivated field, the crops must derive their inorganic constituents from the natural disintegration and decay of the mineral of the soil by which they are brought into a state of solubility. These minerals are removed from the field with each successive crop, and in a limited period, longer or shorter, barrenness is sure to follow.

We come now to the question, What is the best manure to sustain the fertility of the soil? I answer, that for general application farm-yard manure must take the first rank as a fertilizer containing all the substances required to sustain vegetation. An artificial compound may be made to have the same fertilizing power as barn-yard manure, but, in order to do that, no one of its constituents must be lacking. Although the manufacturer may intensify the fertilizing power of his compound by concentration, he can not for general use improve the proportions of the ingredients of barn manure. The excellence of barn manure consists, of course, in the fact that, being derived from the varied food of domestic animals, it contains all the mineral elements which vegetation extracts from the soil, together with a good proportion of carbon and nitrogen. Moreover, the processes of animal digestion and secretion have again in a measure brought these mineral matters which had become fixed in the plant into a soluble state, and therefore again ready to contribute to vegetable nutrition. In this point of view it is evident that this manure must include both the liquid and the solid excrements. In fact, of the two, the liquid excrements are the most valuable, on account of the large amount of nitrogen contained and the entire solubility, though neither of the above constitutes a complete manure.

But although barn manure may be considered a complete manure from the fact that its continued application will sustain the fertility of a soil, still the degree of fertilization can be profitably increased by the additional use of animal manures from time to time. Flesh, blood, hair, bone, &c., are formed chiefly from those vegetable elements existing in the seeds and nutritious roots of plants; they are consequently by far richer in nitrogen, phosphoric acid, and sulphur, the distinctive elements of seeds, than is that part of the food of animals which is rejected in the form of excrements; and which, on the other hand, is richer in some of the mineral elements derived by the plants from the soil. To make, therefore, the animal manure a complete manure, it is only necessary to add to it those mineral matters in which it is deficient. Of all the fertilizing elements contained in manures, by far the most expensive and valuable is nitrogen, whether in the form of salts of ammonia or of nitric acid. The next most valuable ingredient is phosphoric acid, and the third in order is potash. If we estimate the relative efficacy of farm-yard manure and animal matter merely by the amount of nitrogen contained in them, we have the following scale of values according to Johnson:

Farm-yard manure—Nitrogen	.....	½ per cent.
Flesh,	"	3½ "
Fish,	"	2½ "
Blood,	"	3 "
Blood dried,	"	12 to 13 "
Skin,	"	8½ "
Wool, Hair, and Horn,	"	16 "
Bones,	"	5 to 6 "

It must also be borne in mind that these animal substances are much richer in phosphoric acid than barn manure, and that wool, hair, and horn contain about five per cent. of sulphur, which answer valuable purposes in the nutrition of plants.

(To be continued.)

INSECTS INJURIOUS TO FRUIT-TREES.—At the recent Yale College Lectures, Dr. Fitch made the following interesting remarks on Insects Injurious to Fruit-Trees. He is certainly mistaken, however, in saying that but one slit is made on a fruit; we have often seen two, and no doubt others have. So, too, the statement that plum-trees the branches of which hang over water are exempt from the curculio, has no foundation in fact. We have examined a number of such trees, and found them invariably just as badly stung as others, except in some cases where other means of protection had been resorted to. It is a matter of every-day observation, that trees which overhang water are no more exempt from insects than others, and it may be safely assumed that the curculio has no such instinct as is here imputed to it.—ED.

There are at present known to us, in the United States, 60 different insects which prey upon the apple, 12 on the pear, 16 on the peach, 17 on the plum, 35 on the cherry, and 30 on the grape. Prominent among these is the plum weevil, or curculio, which Dr. Fitch stigmatized as the worst insect of our country; for though the midge is at present causing a greater amount of pecuniary loss, he thought its career would be like that of its predecessor, the Hessian fly, and that it would eventually be mastered and subdued by its parasite destroyers. Unlike the wheat midge, the curculio is a native insect of this country, which has now been known upwards of a century, during all of which time it appears to have gradually multiplied and increased its forces, without any important cessations or intervals in its ravages, no parasite destroyer of it having ever been discovered till within a few months past. It was first noticed by the botanists Collinson and Bartram, in 1746, as totally destroying the nectarines in and about Philadelphia, while the plums were but slightly molested. Their turn came next, however, and each subsequent investigator found it ravaging a different section of country. Notwithstanding the volumes written upon it, we do not to this day know where the curculio lives, and what it is doing for three-quarters of the year. All that is currently known of it is, that it is a small brown and white beetle, which makes its appearance on plum-trees when the young fruit is half grown; that it cuts a crescent-shaped slit upon the side of the fruit and drops an egg into the wound, from which egg a small white worm hatches, which burrows in the fruit, causing it to wilt and fall from the tree, whereupon the worm crawls into the ground to repose for two or three weeks during its pupa state; and that it comes out in the latter part of July a beetle, like the parent which six weeks before stung the fruit. This, which is currently supposed to be the main and essential part of its history, Dr. Fitch judges to be quite the reverse; and he is convinced that if there were no fruit for the curculio to eat, it would still thrive to its entire satisfaction.

In New England and New York, the beetle may be found abroad the last of March, if the weather is fine, though usually it is not till about the middle of May; and in a week or two after it becomes quite common. It is found standing or slowly walking upon the trunk and limbs of the plum, cherry, apple, the wild thorn-apple, the butternut, and other trees. Those on the butternut are plumper than the others. From this time onward, till cold weather returns, we continue to meet with it, and late in autumn it is to be seen on the flowers of the golden-rod as plentifully as at any time through the season. When the young fruit appears in June, it attacks it with the skill of an epicure, selecting the choicest varieties first. Its crescent-shaped incision is the signal of destruction, as was the crescent banner of the Moslem of old. The slit made, one egg is deposited; and but one slit is made on a fruit. The peach, plum, and apple, when stung, wilt and fall; but the cherry and thorn-apple do not. This is because the larger fruit contains a sufficient amount of nourishment to mature the worm; while the smaller ones must grow on to elaborate the quantity of food which the worm needs. It is a fact not generally known, that apples are attacked by the plum curculio, yet so great are the losses of this particular fruit, that the lecturer gave it as his opinion that the poorer yield of our orchards now, as compared with heretofore, is due to this insect. The wilted fruit literally covers the ground, under many trees, the fore part of July. Cut into this fruit, and you will find the same curculio worm therein as in the fallen plums.

From the fact that this insect comes forth three weeks before there is any fruit ready for it to eat, and remains after the fruit is gone, Dr. Fitch thinks that it has other places of refuge to cradle its young besides the young fruit. In fact, it is well ascertained that it breeds in the black knot excrescences on plum and cherry-trees, as eagerly as in young fruit. Hence it has been thought to cause the excrescences. But having examined the black knots fully in every stage of their growth, Dr. Fitch says decidedly they are not produced by this or any other insect, nor are they a vegetable fungus, but are purely a local disease of the limbs, in which the bark and wood are swollen and changed to a spongy substance, but without any of the juiciness which belongs to young fruit. This disease has some analogy to the cancer in the human body, and its cure is the same, namely, the knife, removing the diseased part totally, as soon as discovered.

With Melsheimer, Dr. Fitch believes that the curculio breeds in the bark as well as the fruit of trees, for on a specimen of pear-wood sent him some years ago, his microscope revealed crescent cuts in the bark, like those on young fruit, in which little maggots were lying side by side, ready to eat their way onward when the warmth of spring revived them.

Within six months D. W. Beadle, of St. Catharine's, C. W., has sent the Doctor a curculio parasite, which is furnished with a bristle-like sting, with which it pierces the black knot to where the curculio larva lies, and deposits an egg in the body of the latter, to hatch and gradually kill it. The late David Thomas, of Union Springs, New York, first recommended knocking the plum-tree to remove weevils. The remedy is partial, but not infallible. Mr. A. P. Cumings, of New York, recommends to syringe the trees with a mixture of four gallons lime-water, four gallons tobacco-water, one pound whale-oil soap, and four ounces sulphur. The tobacco and soap in solution Dr. Fitch thinks good, but doubts whether the other ingredients add anything to the value of the mixture. There is much testimony to substantiate the fact that trees, whose limbs project over water, always bear fine crops of plums, the curculio being aware that its young will drown if the fruit drops into the water.

Another important insect is the apple-tree borer, a long grub which resides under the bark and bores into the solid wood, sometimes below, but usually slightly above the ground, and is two or three years in getting its growth. A few years since, an agent of one of our large nurseries canvassed Washington county, N. Y., disposing of trees to the amount of three thousand dollars. More than half of these trees have since been destroyed by this borer; a direct loss of $5,000 from this insect in that single county, in addition to the labor lost in planting and nursing these perished trees. This must not be confounded with the borer in the roots of peach-trees, which is the progeny of a moth, while this is the young of a brown, long-horned beetle, having two white stripes the whole length of its back. Specimens of this, as of the other insects spoken of by the lecturer, and of the wood as perforated by it, were passed from hand to hand through the audience. The common soft soap rubbed on the bark of the trees the latter part of May, prevents the attack of this insect. If this be neglected, and the borers have made a lodgement in the bark, their presence is usually shown by particles like sawdust, which they thrust out of their burrows, and when discovered they should be cut out with a knife or chisel without delay.

How the Dutch Cauliflowers are Grown.—A German newspaper, the Landwirthschaftliches Centralblatt, gives the following as the method by which the Dutch obtain their cauliflowers, so famous for size and delicacy. In autumn they dig deep some ground that has not been manured; at the beginning of May they sow the large English cauliflower upon a bed of manure, and cover it with straw mats at night. When the young plants are three or four inches high, they harrow the ground that had been prepared the autumn before, and with a wooden dibble 18 inches long, they make holes about 10 inches deep, at proper distance apart, and enlarge them by working the dibble round until the hole at the top is about three inches in diameter. They immediately fill these holes with water, and repeat this three times the same

day. In the evening they fill them with sheep's dung, leaving only room enough for the young plant, which they very carefully remove from the bed of manure and place in the hole with a little earth. Directly afterwards they give them a good watering, and as soon as the sun begins to dry them, they water them again. When the head is forming, they pluck off some of the lower leaves of the plant, and use them to cover the head.

NEW METHOD OF GRAFTING.—Horace Everett, of Council Bluffs, describes a method of grafting, common in Tennessee, that may be worth knowing in other localities, and which he says is not described in any fruit book that he has read. It is described as follows: "A long smooth shoot or limb is selected, cut from the tree, and a sharp iron wedge driven through the limb, every four or five inches. Upon withdrawing the wedge, the graft is inserted, allowing the shaved end to extend an inch or so through, so that when a graft had been inserted in every split, the limb looked like a long stick, with the grafts extending from it at right angles, a shoot of four feet having about twelve grafts. This stick or limb is then buried in the ground, the tops of the grafts only being allowed to come above the surface. During the past year the grafts took root, and grew from 12 to 36 inches. The next fall the limb was taken up and was sawed apart, between the grafts, thus leaving every graft with a portion of the limb adhering to it in the shape of a cross. I planted these grafts, and the trees grew and throve well. It is certainly a very cheap and economical stock for grafting."

DUNN'S SOLID MARKING-INK PENCILS.—We consider this the most effective invention that has yet been offered to the gardener for marking his plant-labels. The writing is black and indelible, the labels requiring no other preparation than previously rubbing them with a damp finger. The label may be either of wood, parchment, bone, or zinc. The pencil requires no cutting, but the writing-points are raised or lowered in a mode similar to those in Mordan's lead-pencil cases. It is equally efficacious for marking linen, and when our readers remember the trouble and difficulty of obtaining clean and efficient quill pens for applying marking-ink, we think that they will not be slow in patronizing "Dunn's Solid Marking-Ink Pencil." The case and point are only eighteen pence.

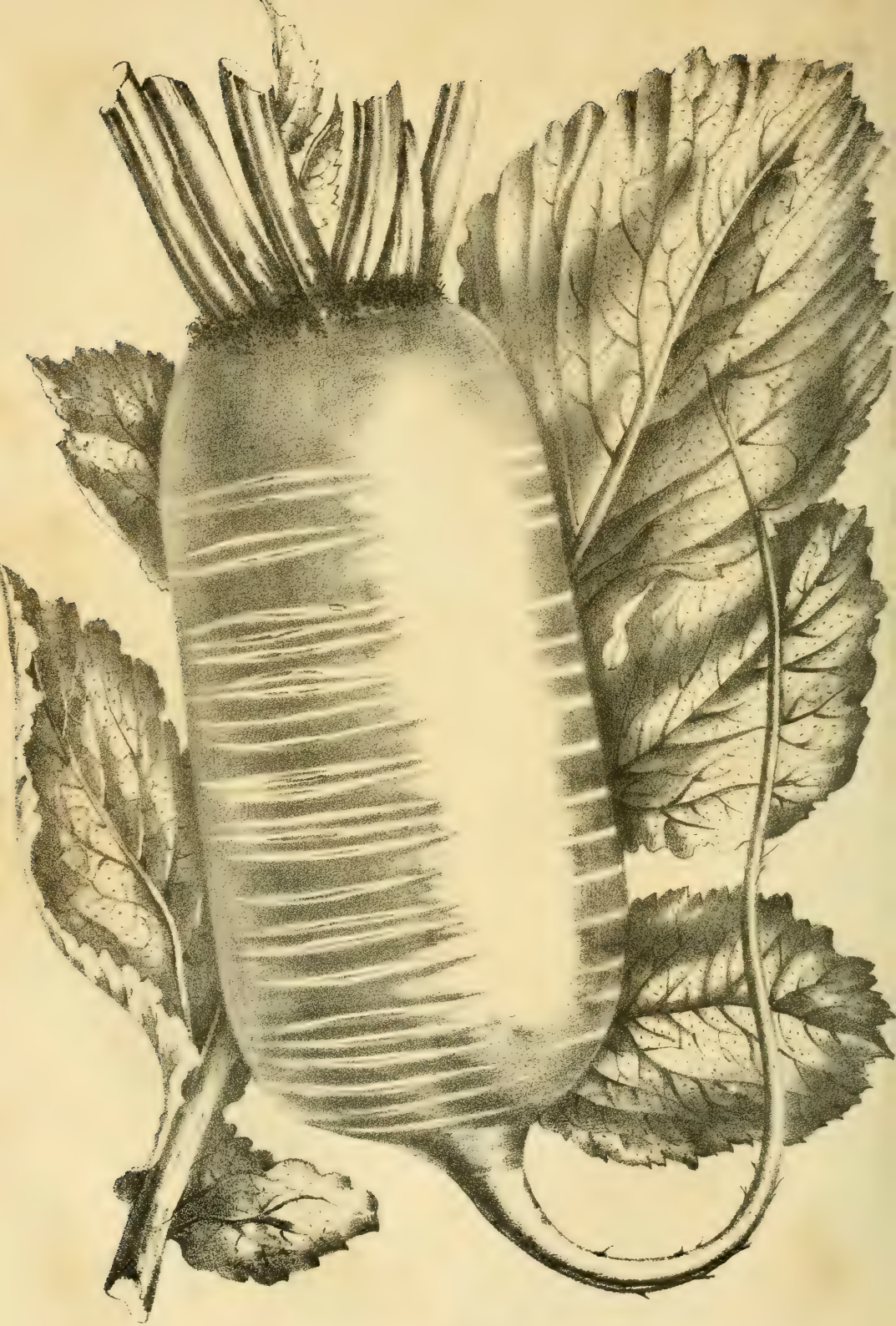
We have no doubt Mr. Dunn will advertise this very clever and useful invention, and in the meantime we publish the following letter we have received from him:

"At last I have the pleasure to forward you one of my Solid Marking-Ink Pencils, which after eighteen months' hard work have been brought to their present form. The Cedar cases in which I at first tried them proved a sad mistake; the oil contained in the wood softened the points and caused the pencil to block up, and this I did not discover until I came to make them in bulk. It is a curious fact, that in the Cedar cases the oil will not act on them if carried in the pocket; whereas, if the same point is put in a Cedar case and left in a cool place, the oil condenses on the point and softens it in the course of two or three days.

"The white wood case contains no oil, and some I have had filled in for three months are as good as ever. I tried an old point the other day, one of the first I made fourteen months ago, and found it much improved by age. This was very satisfactory, as some of my chemical friends predicted a decomposition of the points; but facts prove the contrary.

"No preparation is required for marking sticks, &c.; the slightest damping is sufficient, and they will mark dry; and if you want to fix the writing at once, hold the stick to the fire just below scorching heat.

"It will also mark permanently on linen, &c., dry, or slightly damped with water or the tongue, but not so black as with the tartrate of potash. I could put them up in white wood as a common pencil, but there is a great objection to cutting them—they mark the thumb, and the cuttings mark anything they fall on. I have also tried to cheapen them, by using a common slide, but they do not work so well as with the screw, and as this is a patent case, I am obliged to pay a high price for it; but you will understand they refill for 1*s*. I send you a specimen written on calico, which has been washed several times."—*Cottage Gardener.*



RADIS ROSE DE CHINE.

Annuals in Pots.



SOME of our readers, especially among the old gardeners, may not be inclined to regard annuals with much favor as winter-blooming plants; their favorites are the substantial hard-wooded plants. In addition to a certain prejudice, which we esteem misplaced, they look upon annuals in the greenhouse as altogether unworthy of their skill; they will do well enough in the border, but nowhere else; and almost the only exception they will admit is Mignonnette, for the sake of its fragrance. We do not say that all of them feel thus on the subject, and we only mention the case for the purpose of adding, that skill, knowledge, and taste are just as necessary to grow annuals well as any hard-wooded plants whatever; and the young amateur especially will do well to bear the fact in mind. It is not the rarity of a plant, or the circumstance of its being perennial, that gives it its chief value, but it is rather its intrinsic beauty, and its adaptedness to the purposes of ornamentation: we are quite too apt to seek the rare and costly, to the utter neglect of many old and beautiful plants within the reach of all: the former should be sought discriminatingly, but the latter should not be neglected. The associations which cluster around the flowers of our youth with so much tenderness, should secure for them a place in our most mature affections.

One of our chief objects in having a greenhouse at all, and one in which failures are by no means unfrequent, is to fill it during the winter months with such a collection of plants as shall give it a gay and cheerful appearance, and afford us the means of a pleasant recreation and study; we say study, for we have little respect for a man who can go through a collection of plants without leaving them wiser and better than when he entered. We can give additional variety to this source of enjoyment by growing during the winter months some choice annuals, many of which are admirably adapted to this purpose; some of them, indeed, for beauty of flower, foliage, and form, will compare favorably, when well grown, with the choicest of our hard-wooded plants. We have grown them for many years, and each successive year has increased our love of them. They are both beautiful and appropriate, and commend themselves admiringly to the amateur. Among a considerable number suitable for ornamenting the greenhouse, we would name the *Collinsia bicolor* and *multicolor; Schizanthus Grahamii, Hookerii, Priestii*, &c.; *Lobelia gracilis* and *ramosa; Alyssum maritimum; Reseda odorata*, or *Mignonnette; Clarkea nereifolia* and *marginata; Iberis speciosa, amara*, and *umbellata; Mathiola*, ten-week stock; *Nemophila grandiflora, maculata*, &c.; *Rhodanthe Manglesii, Acroclinium roseum, Senecio elegans, Ageratum Mexicanum*, and *Whitlavia grandiflora*. We have named them in the order in which we prefer them; and we will take occasion to say

that we doubt whether the California annuals can be grown in perfection here except in the greenhouse ; the Collinsia bicolor, for example, in the greenhouse and in the open border, would hardly seem to be one and the same plant.

Our young readers will probably be glad to know the best mode of growing these annuals, and we will try to tell them. Any light rich soil will do to start the seed in ; and if not already light enough, it may be made so by the addition of sand. Shallow boxes about a foot square, or of any convenient size, are better than pots ; they may be made of planed boards, or of any rough stuff, and should have in the bottom one or more holes, about an inch in diameter, to carry off the surplus water ; these holes should be covered with a piece of broken pot. Break the earth up fine, fill the boxes, and settle the earth by knocking on the side of the box. Draw drills two inches apart, and varying in depth according to the size of the seed. The smallest of the seed above named, the Lobelia, should be sown nearly on the surface, having just enough earth on them to keep them in place ; the largest should not be more than a quarter of an inch deep when covered. One or more drills may be devoted to the same kind of seed, according to the number of plants wanted. It is best to sow the seed moderately thick, since much of that bought at the stores is often imperfect ; it is a very simple matter to thin the plants out if too thick, which is not apt to be the case, since they are very soon to be transplanted. When the seeds are sown, press the earth upon them moderately hard with a piece of board, or the bottom of a flower pot, which will cause them to vegetate sooner and more uniformly. As soon as the seed is sown, the boxes should be well watered, using for this purpose a watering pot with a finely-pierced rose ; the watering must be attended to daily, never allowing the earth to become too dry, or soddened with water. The boxes should, if convenient, be protected from heavy rains until the seeds break through, when they should be freely exposed to the sun to make the plants stocky and strong. It is best to keep the boxes out of doors till the weather becomes too cool for the plants ; if they have been pricked into pots, keep the pots out of doors, except a few for early blooming.

Having sown the seed, the next step will be to prepare a suitable compost for growing the plants in. This may be made of two parts of rotted sod or good loam, one part of vegetable mould, and one part of fine old manure, with sand enough to make it tolerably light. If charcoal dust can be procured, it may be used freely with the best results. This compost should be laid up in a heap in some sheltered place, frequently turned, and not allowed to become dry. Pots varying in size from two and a half to seven inches in diameter should be got together, and cleaned. As soon as the young plants have taken on two or three leaves, they should be taken up, and put in the smallest pots singly, except the Lobelia, of which from one to half a dozen plants may be put in each pot. Proceed as follows : cover the hole in the bottom of the pots with a piece of clam-shell or broken pot, and fill them with the compost before named, settling it by gently pressing it with the thumb. Take a trowel, lift out some of the plants, and separate them carefully ; with the thumb and fore finger of the left hand, take up one of the plants by the largest leaf, make a hole in the middle of the pot with a rounded stick, drop in the roots of the plant nearly to the seed leaves, and draw the earth to and around the roots with the stick, settling the whole by

knocking the bottom of the pot on the table. The hole should be deep and large enough to admit the roots. In some cases, where the plants are older and the roots of some size, the pot should be partly filled with dirt, the plant held as before, and the dirt gradually filled in around and between the roots with the right hand. If there should be more plants than are wanted for present use, they can be disposed of by placing three in a pot, but close to the sides instead of the middle ; they can then be readily separated if subsequently used. As soon as pricked out, the plants should be well watered, and the pots set in the shade for a few days, or till the plants begin to grow. The watering must be carefully attended to, always giving enough water to go through the pot. A succession of bloom may be obtained by sowing seed at intervals, or by bringing forward a few pots at a time ; but all the plants before named, when once in bloom, will remain so for a long time. Seed may be sown during the month of August, and even September will not be too late ; Alyssum and Mignonnette may be sown at intervals during the month for late bloom. The plants should be left out of doors until there is danger of frost, when they should be placed in a light and airy part of the greenhouse.

Having the young plants established in small pots, our object is to keep them growing uninterruptedly to the time of flowering, by which means we obtain large, well-formed, and vigorous plants. As soon as the small pots have become filled with roots, which may generally be known by the latter running through the hole in the bottom of the pot, the plants should be repotted ; and at this point some variations will take place in the treatment. Schizanthus, Clarkea, Mathiola, Senecio, Ageratum, and Whitlavia, should be shifted into four-inch pots ; so, also, should a part of Collinsia, Rhodanthe, Acroclinium, Nemophila, and Lobelia ; and another portion of these latter may be put in seven-inch pots. three plants in each, where they are to remain and bloom. Alyssum, Mignonnette, and Iberis may be shifted into five or six-inch pots, with from three to six plants in each. The "shifting" is done as follows : place the left hand over the top of the pot with the plant between the first and second finger ; take hold of the pot with the right hand, invert the pot, and knock the rim gently on the edge of the table ; the ball of earth will come out entire, being held together by the roots ; but it must nevertheless be handled very carefully. A little practice will make the operation comparatively easy. Cover the hole in the bottom of the large pot as before directed, and put in a layer of small pieces of charcoal, pebbles, or potsherds for drainage ; then put in some earth and shake it down ; there should be just as much earth in the bottom as will be necessary, when the ball is placed in it, to bring the top of the latter within about half an inch of the top of the pot ; the vacant space around the ball is then to be filled in, and the earth pressed down with a moderate degree of firmness, but not packed. Shading will not be necessary after this repotting. The soil for the Rhodanthe, Acroclinium, Lobelia, and Mignonnette should have an additional quantity of sand added to it.

The after treatment will be somewhat as follows : Watering must be attended to, and the plants never allowed to wilt for want of water, or the foliage will turn brown and drop off. Acroclinium will need frequent and abundant supplies of water when in bloom : make it a rule, when watering, to give enough to go entirely through the pot ; on this, success in no small measure depends. The plants must not be crowded together ; they must

have room enough for the growth of their laterals, and be staked and tied as growth progresses. The earth on the surface must be occasionally stirred, and the pots kept clean by washing if necessary. An occasional watering with lime water will destroy worms and insects in the soil, and benefit the plants ; and manure water applied sparingly will also be beneficial, but we do not recommend guano. A few of the plants may be left in the four-inch pots for early bloom ; but the principal part of them should be shifted into six or seven-inch pots before they become pot bound ; this is necessary to secure large and handsome plants. If they become pot bound, the growth will be checked, and the plants break into bloom too soon. Lobelia gracilis is a trailing plant, and should be allowed to hang over the sides of the pot, and the pot hung up ; and that is also a good way of growing the Nemophila. Lobelia ramosa may be tied to a small stake. Alyssum, when grown singly, should be tied up ; otherwise not ; and so of Mignonnette. All the others should be staked. Collinsia bicolor, when well grown, is a splendid winter-blooming plant, the most beautiful, in our estimation, of all those we have named. But our article has reached such a length that we must stop for the present.

We make no apology for the above details. We are constantly in receipt of letters which convince us that just such details are what a large number of our readers need, and it is our duty to furnish them; even some "old hands" may not find them altogether uninteresting. We can not forget that there was a time when details like these possessed more interest for us than the pages of a highly wrought romance. Let us "not despise the day of small things."

NATIVE WINES AND TEMPERANCE.

BY REV. A. D. GRIDLEY, CLINTON, N. Y.

It is gratifying to observe the interest now so widely felt in grape-culture. New seedlings of merit are introduced every few years, and acres upon acres of approved varieties are annually planted. Of course, these vines are not all intended for raising table-grapes : a large proportion are designed for the manufacture of wine. Heretofore, our central States, in the latitude of Ohio and Kentucky, have produced nearly all the wines of this country ; but with the introduction lately of superior grapes ripening in August and September, vineyards have sprung up all over the North, and good domestic wine is found in almost every market. Professed wine-tasters, familiar with the best vintages of Europe, may tell us that American wines are only sirups or cordials ; and the French may laugh at our "bad enough *piquette*, as compared with the foaming wines of Epernay ;" but so long as we can get the pure juice of the Catawba, Diana, and Delaware grapes, we, in our simplicity, shall be very well satisfied.

We do sincerely rejoice in the introduction of pure native wines. It gratifies our national pride. Ere long this manufacture may become a source of national wealth. Possibly, too, it may contribute to the national morality. For surely, if Brother Jonathan must drink a certain amount of intoxicating liquors annually, it were better that he should drink that which is reasonably pure, than the adulterated and vile mixtures now so common. For medicinal

and sacramental purposes, at least, it is important to have an article whose purity is beyond suspicion.

We somewhat question, however, the soundness of the above argument in reference to the national morality, and beg leave to state our misgivings. Surely, the readers of the HORTICULTURIST will indulge the writer in this, even if they are of a contrary mind, since the other side of the question has been so often presented in these pages. At least, let us look at both sides, and then judge.

1. In favor of the manufacture and general use of pure wine, we are told that it can not be essentially immoral. Does not the Bible speak of "wine that maketh glad the heart of man?" Remember, also, the Saviour's miracle at the wedding. St. Paul counselled Timothy to "use a little wine for his stomach's sake and his often infirmities." Such expressions would not be used in the Sacred Scriptures, if the drinking of good wines were inconsistent with health and morality.

Moreover, if it be true that impure wines inflame the blood and kindle an artificial excitement, injurious alike to body and soul, it is yet also true that pure wine exhilarates and strengthens man, and contributes to the development of all his faculties. As long ago as Plato's time, it was called "the milk of old age." And the Italians have wrought the saying into a proverb, "Milk is the wine of youth, but pure wine is the milk of old age." All experience shows that man craves and will use some kind of stimulant: it may be tea, or coffee, or tobacco, or betel-nut, or opium, or rum, beer, cider, wine; whether he rightfully or wrongfully craves it, we do not now inquire, but the fact remains, that he desires it, and will have it. The simple and practical question therefore is, What shall that stimulant be? Shall it be the vile compounds which nearly all the malt and alcoholic liquors now in market confessedly are, or shall it be pure wine, from native grapes?

Another argument is drawn from the moral condition of the wine-producing districts of Europe. There, it is said, the common people make daily use of the light native wines of the country, yet are seldom intoxicated, and do not fall into the other degrading vices which prevail among the rum-drinking populations of our own country. Hence the inference, that if pure, innocuous wines were manufactured abundantly here, and made so cheap that all classes could use them, they would drive the fiery, alcoholic liquors, and all artificial mixtures from the market, and so would promote the cause of temperance and general morality; yea, much more efficiently than "Maine laws," or any other legal restrictions or voluntary societies.

2. But many persons hold an opposite opinion, and maintain it in words like these: Whether wine-drinking is inherently wrong or not, it is a fact that all the drunkenness in the world for the first five thousand years was produced by wine. The first man who planted a vineyard, fell into shameful intoxication by the simple use of his own pure native wines. Lot made a beast of himself by the same means. Alexander the Great murdered his own friend, and afterward committed suicide, under the influence of this proposed remedy for intemperance. Timothy may take a little wine as a medicine, unquestionably with good effect, but let him remember that to use it as a beverage is a hazardous indulgence.

The plea that men *will* use some stimulating drink, and therefore should be provided with a cheap and good article, reminds us of an anecdote related years ago in this journal by a leading vigneron of Cincinnati: "Father Mul-

rooney, a Catholic priest in one of our western towns, had a hard set in his parish to deal with ; a frolicking, drinking congregation as could be found in the suburbs of any city, and they fairly worried the life out of him. At last, after a strong temperance exhortation, which he found would have no effect, he closed as follows : Now I am afraid all this admonition will be thrown away on you, ye hardened sinners. You know you have been vexing the very life out o' me, you hathen, and sorra the bit do I belave you'll heed it : so, if you *will* drink, and make brute bastes of yourselves, go to Barney Coyles ; he is a dacent lad, and keeps the best liquors in the town !"

If it be true that the peasantry of southern Europe—a quiet and comparatively unenterprising people—drink their pint of light wine daily, without falling into habits of inebriety, it by no means follows that such would be the case in the colder and more fickle climate of this country, and among a people of so excitable a temperament as our own. The habit once formed of using a beverage with only eight or ten per cent. of alcohol, would lead on to the use of stronger liquors. Well has one observed : "We might as well say that vineyards would make our people eat less meat, less corn and pork, because the residents of European wine-districts are known to be addicted to a vegetable diet. * * * * In this land everything tends to excitement. Men live upon a higher key, and live faster, and live much more full of exhilaration than the same classes do in foreign lands. Our people drink not for the *taste*, but for the *excitement* of liquor ; and so that wine, beer, or whisky will bring them up to the right key, the question of unwholesomeness is quite unimportant." (*H. W. Beecher.*)

But it is not true that the inhabitants of the wine-producing regions of Europe are not addicted to intemperance. Certain pleasure travellers, flying over "the grand tour" of the continent, visiting only museums of art, classic ruins, and the splendid public squares of cities, come home to tell us of the morality of the peasants of Europe ! Little do they know about it. Other travellers, journeying more at leisure, and making special inquiries into the condition of the common people, both in the country and in the lanes of cities, come home with a different story. They speak of poverty, ignorance, idleness, and vice in all its forms ; and as traceable mainly to this very habit of wine-drinking.

Louis Philippe, while king of France, stated to a distinguished American philanthropist, that "the drunkenness of France was on wine." His son added, that "it would be a blessing to France, could all the grape-vines be destroyed, except so far as their products could be used for food."

The Duke of Orleans observed to the same gentleman, that the frequent want of subordination in the French army could be traced to the daily use of wine, "and most of the crime and poverty in the country, especially in the wine-districts, to the same cause."

James Fennimore Cooper declares : "I came to Europe under the impression that there was more drunkenness among us than in any other country, England, perhaps, excepted. A residence of six months in Paris changed my views entirely. I have taken unbelievers with me into the streets, and have never failed to convince them of their mistake in the course of an hour. On one occasion, we passed thirteen drunken men in one hour. * * * In passing between Paris and London, I have been more struck by drunkenness in the streets of the former city, than in those of the latter."

The sculptor, Horatio Greenough, in writing from Florence, some twenty

years ago, said: "Many of the more thinking and prudent Italians abstain from the use of wine; several of the most eminent physicians are opposed to its use. When I assure you that one fifth, and sometimes one fourth of the earnings of the laborers are expended in wine, you may form some idea as to its probable influence on their thrift and health."

Lord Acton, once Supreme Judge of Rome, assured an American traveller that "all, or nearly all, the crime in Rome originated in the use of wine."

Mr. R. S. Fay, of Lynn. Mass., once declared at an agricultural meeting in Boston, that he "had never seen so much intemperance in New England, as he had within sight of the Pyrenees."

The argument drawn from the morality of wine-growing districts of Europe will hardly bear handling: it falls to pieces. But, supposing that pure wines would answer the end proposed, viz., as a preventive of intemperance, is it probable that they could be manufactured in this country at so low a cost as to bring them within reach of the common people? We greatly question it. And again, if they could, have we any assurance that native wines would be less liable to adulteration than the foreign confessedly are, or than native spirituous liquors are? No one can deny that adulteration of wine is common in all parts of Europe. Rev. Dr. Baird, an extensive traveller on the continent, and a close observer, says that "pure wine can seldom be found except at the vineyards, and that adulteration is all but universal." Greenough says that the wines of Italy are seldom found pure; "for, although the pure juice of the grape can sometimes be furnished at about one cent a bottle, yet all who have studied the matter know that the retailers choose to gain a profit by the addition of water and drugs, that will maintain the color, body, bouquet, and intoxicating qualities it originally possessed." And if wine, which can be made at so cheap a rate, is adulterated for a profit, will our own more costly article fare better? It is notorious that the wines of certain American merchants, extensively advertised as pure, and made from native grapes, will not bear the test of chemical analysis. If adulterated wines will *pay* the manufacturer better than pure, we may rest assured that such wines will be made.

Such, in substance, are the arguments on both sides of this question. The writer of this article does not undertake now to pronounce judgment upon them. Meanwhile, he earnestly recommends the home manufacture of wine for medicinal and sacramental purposes, and the extensive culture of grapes for the table.

[A question, this, of grand importance, whether viewed in its commercial or moral aspect; one, too, that ought to be met early and fairly. We have considered the subject seriously in all its bearings, and our present conviction is, that the introduction of pure American wines will tend to lessen the evils of intemperance, and it is this conviction which has caused us to speak encouragingly of their manufacture. This is one of those questions which we are not willing to treat of in a commercial aspect alone, however much wealth it might put in our coffers; its moral bearings are too overwhelming to be lost sight of for a moment. We nevertheless believe, that to accomplish any practical good, we must, in our philanthropic enterprises, deal with mankind as we find them; and if we can not do all the good we would, let us do what we can. We thank Mr. Gridley for having started the subject; we can at least promise him to keep it open.—Ed.]

LANDSCAPE ENGINEERING AND GARDENING.—II.

BY GEO. E. WOODWARD, CIVIL AND LANDSCAPE ENGINEER, 29 BROADWAY, N. Y.

THERE can not be anything more commendable than that spirit which induces us to ornament and embellish our country homes, and draw around us those tasteful elegances which so properly belong to country life ; nor is there anything which so fully illustrates the position, tastes, and wealth of its owners, as a well-designed and well-kept country seat.

The high standard now reached in the progress of Landscape Art, and the increasing interest that is being shown in the construction of public parks, rural cemeteries, &c., is an evidence of our appreciation of the beautiful, and that rural enjoyments are not limited to but few of the residents of our large cities. The public taste is being educated every day, by opening to all the finest models known of landscape improvement—a greater perfection in rural art than has heretofore been attempted in any of our private country seats.

High art in landscape gardening is a matter of economy as well as taste. It is less expensive, in the execution of any improvement, to attain excellence at once, than to find out after completion, that a better and more satisfactory plan might just as easily have been adopted. It costs no more to set out a tree in the most appropriate place for it, than to set it out in a position anywise inferior to that which it would adorn the most. It is cheaper and far more satisfactory to have first-class roadways and walks ; not only cheaper in first cost, but cheaper in every after expense.

Nature deals in the most beautiful forms of curvature, and from them it is but a step to the broken forms of the picturesque. There is no intermediate link, no straight lines, either wild and broken, or graceful, flowing, and beautiful : one may lead to the other, they may be united, but the characters of each will always be distinct ; and we think that taste somewhat questionable that would introduce what are termed rustic walks and drives into the wholly natural portion of an estate. There is nothing so pleasing as to give access to the picturesque by the use of the beautiful : that is, art in construction would convey a greater perfection, and nature appear more wild and picturesque by the striking contrast between them. We would not, as a matter of taste, make inferior roads and walks through natural grounds, because we do not wish to diminish any pleasure we may enjoy in them ; and as roadways become ornamental in the same proportion that they are useful, we plainly see that any detraction from the highest known perfection in their design, location, and construction, is just so much detraction from their beauty. If the picturesque portions of the grounds are to be made inviting, there must be the same unconscious ease of ascent and descent, the same forgetfulness of toil that belongs to the artificial or highly dressed grounds. Clambering a hill-side soon loses its novelty ; and we confess we like that reason that enables us to so contrive a walk or road that, by an almost imperceptible grade, and the most beautiful forms of alignment, we view alike the valley and the hill-top.

When we undertake to embellish and beautify a country home, is it not worth while to give the subject a long and careful consideration ? It is going to cost a good deal of money, and as long as our name is connected with it, it will be an exponent of our tastes, our education, and associations.

It is by no means agreeable to have a second-rate place ; yet we will venture to say that ninety-nine one-hundredths of our amateur landscape gardeners would willingly undo all they have done ; their matured judgment and experience can see nothing desirable in their early attempts. Experience costs money, and the results of experience have done much to injure the art of landscape adornment. If men will try experiments, why give their results as the results of the positive efforts of the professional expert? There are none so perfect, none so gifted, that they can at once produce the highest standard of excellence in any art. We know that those who approach perfection the nearest, can only do so after a lifetime of study and devotion.

The ideal in landscape treatment is a dangerous experiment in the hands of any but a rural artist, and, like the ideal in landscape painting, suffers sadly by comparison with the close teachings of nature. A finely executed view of natural scenery yet takes the lead of the finest ideal landscapes : effects, all of the same grade of beauty, are not so striking as a single fine effect brought in contrast with others of lesser note. It is by comparison the eye judges of excellence, and the beautiful depreciates when brought in contrast with that which is more beautiful. The hand of Art can aid Nature, arrange the materials so freely supplied ; and that artist who closely studies nature, and takes advantage of the many hints thrown in his way, will be more successful than he who undertakes to idealize, and particularly so if he be a knight of the weeding-hoe and spade.

JOTTINGS OF A FLYING VISIT TO BOSTON AND VICINITY.

Being a thorough-bred Yankee, my first instructive lisping, so they tell me, was "Go-ahead." When I became a tall boy, I was afflicted with sundry diseases peculiar to the "teens," among which was a love of jewelry ; so I sported a large ring : thereon was engraved my motto, "Go-ahead." Now I am an old man, behold it on the panels of my carriage. "Speaking of Peaches, Jasper," says my friend, "there is one of your go-ahead men has built a real Orchard House : here is his address, 'G. G. Hubbard, Esq., Brattle st., Old Cambridge.'" It is absurd to suppose I raised excuses. No, gentle reader, I am an enthusiast of the first water, and would rather erase from my panels and plate those envied armorial bearings granted by John of Magna Charta notoriety, cut all our upper-tendom acquaintance in Gotham, and risk my daughter's being married to some plebeian who could not reckon a line of ancestry of some six or seven hundred years, than forego the pleasure of visiting gardens and seeing everything new or progressive ; so seizing my hat, I mount the horse-cars, and am soon before one of those beautiful suburban residences famous around Boston. This is well planted with evergreens, very fairly arranged, and superbly kept : inquiring for the gardener, I found Mr. Welsh, who very kindly communicated all particulars. The house is built of the best materials, and is well finished ; runs north and south, and faces the west, is somewhat flat, as the following dimensions will show : length, 115 feet ; breadth, 18 feet ; height of back wall, 12 feet, of which 3½ is glass ; height of front wall, 8½ feet, of which 2½ is glass ; both front and back wall sashes are movable for ventilators. There are

150 trees in tubs of 18 inches in diameter, consisting of Peaches, Plums, Nectarines, Cherries, Pears, and Figs, but principally Peaches and Nectarines, and although they were only tubbed early last fall, they are very thickly fruited; but I did not notice they were more than a week or ten days in advance of those in the open ground; but more healthy, vigorous trees it is impossible to conceive.

Now everybody is aware Orchard Houses originated with Mr. Rivers, of England; but the climate of Old England and the climate of New England are very dissimilar, at least so I found it during my sojourn there; and Mr. Rivers is entitled to the best thanks of his countrymen for showing them how to secure a crop of Peaches, &c., which drenching rains and late spring frost always rendered uncertain. The Orchard House of Mr. Rivers is a mere skeleton, with a few rough boards for lids, permanent openings for ventilation, immovable sashes. Their climate requires nothing more. The means are sufficient to the end. To ward off heavy rains and slight frost, which destroy the organs of fructification, is all that is necessary. Compare their weather tables with ours in the months of March, April, and early in May, and then let me ask anybody what would be the condition of the occupants of an Old England Orchard House in a New England climate. The extremes in twenty-four hours are something that would frighten an English gardener. Mr. Welsh informed me that the temperature in and out of the House by night was identical, and that as a precautionary measure he had covered up his trees with sea-weed, in order to retard them; for had he availed himself of our bright and glorious sunshine, the night would have used them up as surely as if they had been in the open quarter. Now what does this suggest? a hot-water pipe, a heating apparatus, if you please, and there we drop the term Orchard House; it at once and forever ceases to be one in the English acceptation of the term.

My experience assures me that all trees in their dormant season are as well and perhaps better in a cellar or some such place where the temperature is not hot enough to excite, nor cold enough to reach zero, till they are wanted, and then transfer them to the House, where you have some command over the temperature.

Another English method for growing the Peach under glass is somewhat common in this neighborhood, and I say erroneous, as no calculation of the immense difference of climate could have been considered. I mean permanent planting. All peaches grown under glass, if in tubs, and not ripe by the 20th of June, may with advantage be removed to the open air; if permanently planted the sashes ought to be removed, for a thousand and one reasons. A very important advantage of tub culture is, that, while you secure four, five, or six dozen Peaches from a tub, you get a crop of grapes also. This I suppose is Mr. Hubbard's intention, as I noticed a vine to each rafter and a vine border outside. All praise be to him for this grand beginning. I impatiently wait the spring of 1861. With pleasure I leave this, and bend my steps to Hovey's nursery—this man of seedlings and importation: between the two you always find something *new*. I was a few days too soon for the *Strawberries*. Hovey drew my attention to a new English variety, called Wonderful, and, according to present appearances, a just appellation. It is an immense bearer, and very *hardy*. Sir C. Napier, ditto; and I see by the report in the *Gardener's Chronicle* of the London exhibition, that all others play second fiddle. La Constance also looks very promising;

so does Wilson's Albany ; it is unquestionably very hardy, and an immense bearer, but I am afraid the general opinion respecting its flavor is but too true; at all events. this season will decide and define its position. It is a singular fact, that although the Hovey Seedling has been before the public these twenty years, it has not been surpassed by anything ; truly this is not in keeping with my motto. I was sorry to hear him say Pears had not set as he had anticipated, though his great avenues of trees looked remarkably healthy. The Hon. M. P. Wilder told me the same doleful tale. The public have, as they ought, very generally responded to his invite to purchase Thuya Hoveyi. Surely it is a treasure, a gem, an invaluable acquisition to ye of the North, although it will not supplant Thuya aurea. Where T. aurea is not hardy it is a glorious substitute. The Japan Lilies looked remarkably healthy in a bed 4½ feet by 70 or 80 long ; last year I was fortunate enough to see them in bloom; and was astonished to see how much was accomplished by one step in hybridization ; but what struck me most was the hardy robustness of those seedlings compared with old Roseum and Rubrum ; indeed, it is what the Shetland pony is to the dray horse. Brydges, in reviewing Lord Byron's "Lament of Tasso," says, "Had Lord Byron written nothing but this, to deny him the praise of a grand poet would have been flagrant injustice or gross stupidity." Now I thank Brydges for furnishing me with a sentence to express my ideas of Hovey and his Lilies : but enough, I have more Boston Jottings, if wanted ; and singular enough, though my motto is "Go-ahead," my name is JASPER STANDSTILL.

[We rather think we have you, Jasper, but do not feel quite sure. Suppose you try your hand at "Jotting" again, and let us know what other folk are doing in Boston. The Hovey may be in greater danger than you imagine.—ED.]

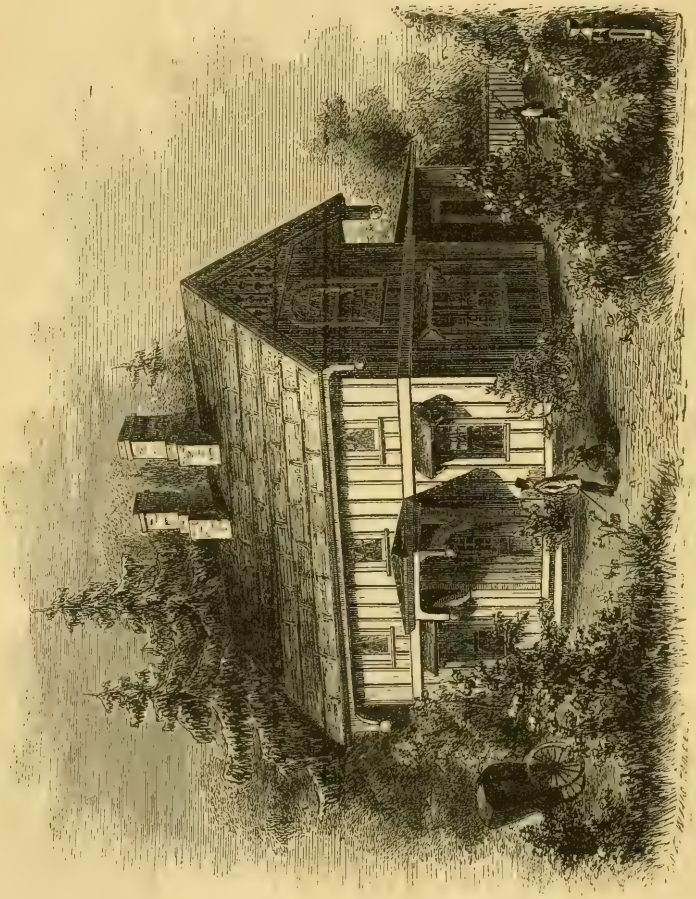
DESIGNS IN RURAL ARCHITECTURE, No. 4.—A SUBURBAN RESIDENCE.

BY GEO. E. HARNEY, LYNN, MASS.

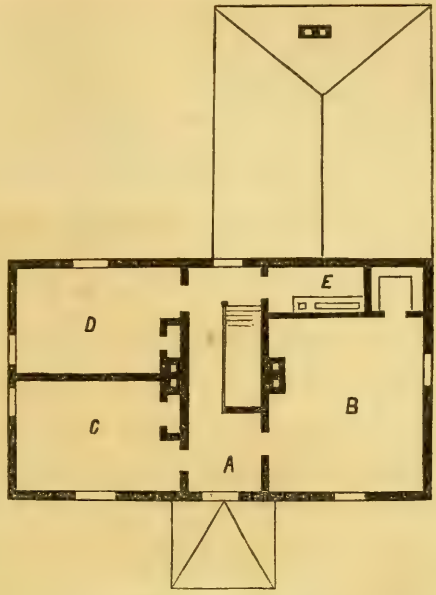
THE design which we here offer, was made for a gentleman in the vicinity of a neighboring city, and, we think, will be found adapted to the wants of many of our suburban builders ; combining, as it does, economy with convenience, and having, also, some slight pretensions to ornament in its exterior.

It is to be constructed of wood, and may be covered in the vertical manner with sound inch-and-a-quarter plank, and two-and-a-half-inch battens. The front door is shielded by a broad hood, supported on heavy brackets ; all the lower windows have broad plank hoods. The height of the first story is ten feet in the clear, and the second is seven feet high at the plates and ten in the centre of the rooms, the space above serving as a ventilator for the whole house, having ventilating flues opening from the principal apartments.

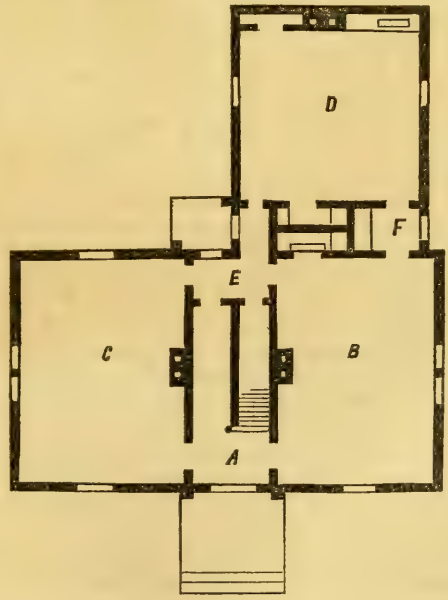
The interior finish should be plain throughout, the doors and windows having plain architraves with a neat band moulding, and the base being eight inches high with a bevel on top. The walls are to be finished for papering.



A SUBURBAN RESIDENCE.



The arrangement of the plan gives a hall, A, six feet wide, opening on the right into the living-room, B, which measures fourteen by nineteen. This room communicates through a passage, F, with the kitchen, D. The



passage is to have three drawers, with three wide shelves above, and is lighted by a narrow eight-light window. The kitchen is fourteen by sixteen, and has a fire-place, a sink, and two good closets. A door opens into the entry, E, which communicates with the cellar, and opens out upon the portico. It also connects with the parlor, hall, and living-room.

The second floor contains a hall, A, opening into the several chambers, B, C, D, and the bath-room, F. At the right of the bath-room is a large closet, belonging to the chamber, B.

The cost of this house would be about eighteen hundred dollars.

REMARKS ON THE SWEET WILLIAM—DIANTHUS BARBATUS.

BY DANIEL BARKER, GARDENER TO B. K. BLISS, SPRINGFIELD, MASS.

Seldom do we meet with a genus possessing more desirable qualities than the above-named. Sweet Williams are easily grown, profuse flowering, and within the reach of all who possess the means of a single flower bed or border. The treatment required by them may be summed up in a few words :

During winter—in the eastern and middle States—it is best to plunge them in tanner's bark in a cold frame, preserving them from frost. About the middle of April, or as soon as the weather permits, they may be planted out in the flower-beds or borders, or in masses, where they will be very attractive during the summer months.

Nowhere have I seen these gay and beautiful flowers so extensively cultivated as their merits justly deserve. Numbering among them so many splendid varieties, they are a most decided acquisition to the flower-garden ; flowering early in the season, and bearing a succession of large corymbose heads of blossoms of great variety in marking and tints. The desideratum of the European florists for the past few years has been to improve upon the old garden varieties of Sweet Williams, and to produce the finest shaped flowers, approximating as closely as possible to the ideal standard of perfection, and to have the largest corymbs or trusses that can be obtained.

To Mr. Hunt, of Wycombe, England, honor is due for raising the character of the Sweet William from a coarse, small, and almost worthless flower to very near perfection ; and with care the improvement will still go on, and the present superb varieties will be surpassed in every particular.

The inclosed specimens are all of the new and improved varieties, now blooming for the first time at the establishment of B. K. Bliss. By comparing them with the older varieties, the improvement will be most striking.

The following brief descriptive remarks upon a few of the best varieties now flowering here may be useful, and can be relied on, having been made from the flowers when in the best condition.

Miranda.—Rich velvety crimson, with conspicuous pure white margin ; strikingly distinct habit, and form very fine.

Julia.—Rich violet purple, with a bold and well-defined white margin ; a remarkably free and beautiful variety.

Rosalind.—Rich violet purple, with a large and well-defined pure white margin ; a wonderfully large truss, and excellent habit.

Olivia.—Rosy red, with a rich crimson centre ; a well-formed flower, and of fine habit.

Helena.—Rich crimson and white, with a large pure white margin ; habit good, forming a close, compact mass of flowers.

Cressida.—Rich rosy purple, mottled with white ; margin pure white ; habit dwarf and very compact.

Ophelia.—A beautiful carmine, with fine white margin, fine habit and truss, and profuse bloomer.

Desdemona.—A beautiful soft violet purple, with pale centre and well-defined white margin ; truss very large and well-formed ; a most profuse bloomer.

Virgilia.—Rich red crimson centre, with a fine large, picturesque white eye, and pure white margin : a beautifully formed flower.

Beatrice.—Rich velvety carmine centre, with a rose-colored eye, and well-defined white centre; a very fine and beautiful variety.

Lucinda.—Rosy purple centre, with a large, conspicuous light eye ; margin of the purest white ; an extra large, well-formed flower, and elegant habit.

Titania.—A delicately beautiful combination of rich violet purple and deep purple, with a conspicuous white eye and broad margin of pure white ; fine form and truss, and excellent habit.

[The specimens of the above came to hand in good condition. We have compared them with the descriptions, and find the latter to be accurate. Some of the varieties are not as distinct as could be desired, but they are a decided improvement upon those of "ye olden time." They are all very pretty, but the best and most distinct are the following : Miranda, Julia, Rosalind, Olivia, Cressida, Ophelia, Desdemona, and Titania. Miranda is very beautiful, and the best of the lot. Unless these new kinds are much more tender than the old ones, the winter protection recommended by Mr. B. would hardly be needed in the Middle States. The necessity for protection would deter a good many from growing them, and we hope it will not be needed. —Ed.]

SUNDRIES—No. 2.

BY A BUFFALONIAN.

With your permission, Mr. Editor, I will continue my remarks upon articles in the last volume, (14th) Page 443, "Fruit-trees in ornamental plantations." That some fruit-bearing trees may be rendered very ornamental as well as useful objects, is not to be questioned, and I might mention varieties which are really more beautiful in form and foliage than many of the so-called "ornamental trees ;" still I do not quite like the idea of planting them for ornament, except in grounds of very limited extent, preferring that each class be assigned to its appropriate place, either on the lawn or in the orchard.

In small premises it is an object, of course, to have a tree fulfil both purposes ; and not only that, but a fruit-tree planted near a building may be sometimes advanced or retarded (according to the exposure) in its time of ripening its fruit. For example, a cherry-tree near my own window is so

situated, that a part of its top directly faces, and, indeed, some branches lie against a high and steep roof, with a south-western exposure. In consequence, the fruit upon those branches is not unfrequently ripe by the 21st to 25th of June, while on other trees (and, indeed, the lower branches of the same tree) the same variety—White Bigarreau—is not often ripe much before the 1st of July.

I think Mr. Saunders in error in proposing to plant apple-trees nearer together than is the usual practice. He thinks that forty feet is an unnecessarily long interval—I do not; pears, I admit, may be planted at twenty or twenty-five feet, and do well for many years; but I have had some experience with a small apple-orchard, closely planted, and find that the lower branches, which will soon interlace at much less than forty feet, are constantly dying out, and on those which remain the fruit is small and inferior.

Sometimes we find the lawn and the orchard reversed, as is the case with those of a neighbor of mine, a gentleman of more wealth than taste, but who has a fine grapery and a beautiful lawn. In that part of the latter directly contiguous to the front entrance, he has several cherry-trees, intermixed with ornamental trees of various kinds, while in a lot at the *rear* of his house, he some years since made a plantation of *maples*, disposed in parallel lines, at accurate intervals, in the same way that he would have planted an apple-orchard.

(506.) "*The curculio the cause of the plum warts.*"—This theory, which I have thought fallacious, appears to be so distinctly proved by the observations of Miss Morris, that I feel almost compelled to give in my adhesion to her views. Perfectly aware of the fact that the curculio and other insects were to be found in the swellings, I imagined that they were the effect, not the cause, and had taken up their abode there, merely because they found a convenient lodging. The late Mr. Downing, I believe, entertained this view of the case, while Profs. Peck and Harris held the opinion which is adhered to by Miss Morris.

It is rather satisfactory than otherwise to find, (if it is so,) that the same villainous little insect is the cause of both the chief ills that the plum seems heir to, for it is certainly better to fight one enemy than two or more; and I believe for one, that if all plum-growers would, for three or four seasons, persistently and thoroughly employ the sheet and mallet, we should have little cause either to fear or dread the depredations of the curculio, or rhynchœnus, hereafter.

Messrs. Ellwanger and Barry are perfectly successful in preserving their plums in this manner. I had the pleasure of meeting the late editor at their place, upon the occasion which he so pleasantly mentions, (at page 483,) and I certainly never saw such a magnificent crop of plums as was just then at maturity upon their trees. I have tried, and seen tried, various other preventives, such as lime, netting, pigs, poultry, etc., but have faith in nothing but *shaking and killing*. A war of extermination is only to be relied upon, and at any other game the rhynchœnus will be pretty certain to beat.

(510.) "*Notes on Pears*," &c.—Prof. Coppock is a close observer, and his statements are valuable; some of them I can corroborate, having had various opportunities of seeing (*and tasting*) the results of his experiments. That with the Vicar of Winkfield was wonderfully successful, and I was greatly surprised on eating a specimen, to find that a pear of which I had

never before found one that I considered fit to eat; *could* be so exeedingly fine. —In regard to the Columbia, I have had very fine specimens which were of fair quality, although rather wanting in high flavor, but of late I find it to *crack*.

(512.) *Country Houses.*—I like irregular houses. To my mind they are not only more convenient, but also more beautiful than regular ones. They possess this important advantage, that you can lay out your ground plan with an eye to convenience and comfort alone, and then build the house in accordance with it, while in a square house you are bounded by a stern and uncompromising rectangle, which will not permit you to take any liberties with its uniformity by projecting a conservatory here, a library there, or a dining or drawing-room somewhere else.

It is one of the rarest things in this world to find two people who have precisely the same ideas concerning a house; it is therefore wise to furnish various plans and designs, in order that, if not all, many may be suited; but I am greatly in favor of irregularly planned buildings, particularly out of town. It is undoubtedly cheaper to build in a square form, but you lose so much in beauty and convenience, that I would prefer to retrench in some other way, either by reducing the size of the building, or expending less upon the interior finish.

(524.) "*Delaware Grapes found in three different locations, in a wild state.*"—This is pretty strong evidence in favor of the American origin of this fine fruit. Does the opposing party give it up yet? Some genius has been lately trying to prove that the Isabella is a foreign sort too. I wonder if we *have* any *native fruits*.

(564.) "*Pruning Grapes.*"—I give it up, and admit that Mr. Saunders has the best of the argument, for if a vine is not "enfeebled" after nearly fifty years of annual cutting down, I see no reason to fear that such will be the case afterwards. I used, too, in my remarks upon Mr. Saunders' article, the word "annually" instead of "biennially," (which was of course the proper one,) and ask the forgiveness of Mr. S. for the inadvertence which gave a wrong interpretation to his remarks.

(575.) "*Fruit-Gatherer.*"—I conceive that with the substitution of a hose of cloth (as recommended in one of the early volumes) for the net, which possesses several important disadvantages, this instrument would be more effective than any that have yet been described. In my younger days, when my pomological taste was rapidly developing itself, I, having discovered that the finest apples and pears usually grew out of convenient reach, converted a fishing-pole and a broken table-fork into an apparatus for the better securing such specimens. It operated well, so far as detaching the fruit from the tree; but as its safety then depended upon my dexterity in catching it before reaching the ground, I sometimes found that a failure in this particular had made of a very ripe apple a complete *squash*—a "transmutation of varieties" by no means to be desired.

The net is unwieldy if partially filled with fruit, and terribly awkward and inconvenient to reverse and unload each specimen singly, besides the length of time required by the operation. With a low-headed tree, and a ten foot standing-ladder, such contrivances are rarely required, very few specimens escaping the hand of the operator.

[We think "a Buffalonian" might continue his remarks profitably, and we should be glad to have him do so.—Ed.]

PRESERVING SHADE TREES.

BY H., COLUMBUS, OHIO.

Aware of the interest you take in the subject of ornamental shade trees, I wish to call attention, or rather to draw out from yourself or your correspondents, some information in regard to the best means of preserving them in a sound, healthy condition. I have noticed here, and in other places, a commendable zeal in planting shade trees in the streets ; but unfortunately, in many cases, the zeal seems to abate with the mere planting and protecting with some sort of rough box. The trees grow perhaps for a year or two, until they throw out considerable foliage, and then the winds swaying the tops, the trunks are so rubbed against the tops of the boxes that the bark, and sometimes a part of the wood, is worn off, leaving a wound which, though it does not immediately kill the tree, leaves a permanent defect, at which in a few years some unusual wind or storm twists it off. Now can not some remedy be found for this evil? That it is a very serious evil, must be apparent to every lover of trees in our towns and villages. In this city we have, I suppose, four thousand shade trees, and I doubt very much if there are five hundred that are not more or less damaged by abrasion, and most of them fatally for any considerable age. And what is true here my observation leads me to believe is true in other places. Hence I think it is an important question, What can be done to save the trees? I think the great desideratum is the right kind of a box ; one that is cheap, durable, and as ornamental as may be, with some arrangement attached to prevent injury to the tree from rubbing of the trunk, and so made also as to give free admission of air and light. Could not one of iron be made to fill these conditions? Wrought iron would, I think, be best. Let us have the subject discussed, and I have no doubt the genius of our mechanics will suggest the remedy. Designs for a good cheap box, and also for one more costly and ornamental, are wanted.

[The chief object of a box is to protect, and not to support a tree ; the support it affords a tree while young is of little moment. We think a box made in two pieces, connected with an elastic hinge or cord, with a series of rollers at top and bottom, would answer the purpose. Such a box would not, of course, be inserted in the ground, but would be held to the body of the tree by the elastic cords, which would yield with the growth of the tree. Protection would thus be afforded and abrasion avoided. We will explain this more fully hereafter with a drawing. In the mean time, some of our readers may have something to suggest. The evil complained of is quite as great as H. represents it.—Ed.]

THE SPOTTISWOODE RAT-TAIL RADISH.

BY GEORGE LAWSON, PH. D.,

Professor of Chemistry and Natural History in the University of Queen's College, Kingston, Canada.

In the Horticulturist for July, (vol. xv., p. 308,) you reprint from the *Revue Horticole* an article detailing M. Courtois Gerard's success in the introduction to France of what is inappropriately termed the *Madras* Radish.



THE SPOTTISWOODE RAT-TAIL RADISH.

It appears from that article and the note appended thereto, that French and American Horticulturists are not aware that this delicious vegetable has been in successful cultivation for several years, by various persons in Britain, and by myself in Canada. The plant is a native of Java, and appears to have been cultivated in some parts of India for a considerable time, particularly in the neighborhood of Benares. However, in the recent Enumeration of Indigenous and Useful Plants—"*Hortus Madraspatensis*'—prepared by my friend Dr. Cleghorn, Professor of Botany at Madras, this plant is not referred to. The name Madras Radish must therefore be dropped, having probably originated in some error. Its introduction to Europe resulted from a conversation which I had some years ago with Mrs. Colonel Spottiswoode, of Benares, who accordingly forwarded seeds from that place to Professor Balfour, of Edinburgh, under whose care and that of Mr. McNab, the plant was successfully reared in the Edinburgh Botanic Garden. To these gentlemen I am indebted for the seeds, whence my small Canadian stock has been raised. The following notice was inserted in the edition of Chambers's Information for the People, published in 1857, the horticultural parts of which I was requested to revise :

"Spottiswoode's Rat-Tail Radish.—In 1856 a remarkable kind of Radish was raised in the Edinburgh Botanic Garden, from seeds sent from India by Mrs. Colonel Spottiswoode. It is called the Rat-Tail Radish, and the edible part, or "radish," is not the root, but the seed-pod in a green state. When sown early it produces a very abundant crop, and is well suited to the climate of Britain. The young plants require to be thinned out to a foot or more apart, in rows of about two feet, and plentifully supplied with water during dry weather. The radishes or pods of this plant are very delicate, and well adapted for salad."—*Cham. Inf: Peop.*, vol. i., p. 537.

I shall not on the present occasion occupy your space with a lengthy detail of the history and uses of this plant. A series of experiments at present in progress may possibly throw some light on disputed points, and these shall be reported in due time. I wish now, however, to state that I regard it as one of the most valuable vegetables that have been introduced for many years. The pods have a peculiar pungent yet delicate flavor, are perfectly succulent, and may be used either as a salad or to form a pickle. In all forms the ladies say they are "delicious." I doubt not it will in time displace the root radishes, being much more palatable, and affording a greater yield.

Notwithstanding the opinions expressed by the writers in the *Revue Horticole*, I believe the plant to be identical with *Raphanus caudatus*. The French horticulturists seem to find their pods comparatively short, while those of *R. caudatus* are described by botanists as three or four feet in length. It must be observed, however, that there are many varieties of the Rat-tail Radish, varying in the length of their pods, and that a good stock is only obtained by carefully saving seed from the very long, attenuated-podded sorts. The accompanying drawing shows a pod of the natural size when fit to eat or pickle ; but they become much larger as they ripen, and on my plants at present there are pods not yet too old for use, which are several inches longer than the one figured. In good varieties the pods are not erect, as described in last month's paper, but gracefully pendent and curved, as I have endeavored to show in the figure. Fourteen or fifteen inches is a good length for the pods in Canada or the States. In warmer

climates they will no doubt grow much longer under good management, and even here I do not despair of ultimately obtaining pods that will approach De Candolle's description: "Siliqua tota planta longior, imo 4–5 pedalis," &c. I am sorry to see the *root* referred to as edible. In the true large-podded varieties it is quite worthless. The crop must be grown for the pods alone. The leaves, however, when very young, are succulent and edible, and have the same flavor as the pods.

[We are much obliged to Prof. Lawson for his instructive and interesting article. He not only establishes the true name of this Radish, but gives it a value as an esculent which will make it widely sought. What we have seen of it thus far would lead us to concur in all that the Professor has said. We shall know more of it as the season progresses.—Ed.]

ORCHARD HOUSES.

BY DR. G. PEPPER NORRIS, WILMINGTON, DEL.

The most complete establishment for this system of culture that it has yet been our good fortune to see is in the grounds of Wm. Beech Lawrence, Esq., at Newport, Rhode Island, and under the care of Mr. Alfred Chamberlain. The house is a lean-to, 300 feet long, built in the best and most substantial manner, back and front walls of stone, back wall 12 feet high and front 5 feet, (two feet stone arch, and front glass ventilators, 3½ feet by 3 feet;) the house is 13½ feet wide, the trees in pots being grown in a pit five feet high and seven feet wide, the larger pots being placed nearer the back; the roof is made of seven-by-nine extra thick horticultural glass; the ventilation in the roof is effected by means of 3½ feet by 3 feet sliding sash; these, as well as the front ventilators, in which the glass is larger, are worked by means of an iron crank—an ingenious invention of Mr. Chamberlain, which for completeness and simplicity exceeds anything that we know of. The entire house is heated by hot water pipes, with one of Wethered & Cherevoy's patent furnaces, and is divided by glass partitions into sections of thirty feet; the floor is paved with brick, and around the pits are shelves for the smaller trees, together with a shelf eighteen inches from the roof, on which it is proposed to stand some 600 strawberry pots; thus bringing into use all the available space, at the same time furnishing the necessary facilities for approaching each tree. The first and second divisions are intended for growing pineapples; in the third are 200 pear-trees, in various sized pots: here are Doyenné d'Eté, Duchesse d'Angoulême, Louise Bonne de Jersey, Tyson, and I know not how many other varieties, all on the quince; on some there was a fair show of fruit, although only potted last October. The size of the pots varies from eleven to fourteen inches, the first-mentioned size being esteemed most desirable, but with many of the trees it was found impossible to cut away enough of the roots for an eleven-inch pot without endangering the tree; it is Mr. Chamberlain' sintention to use eleven-inch pots altogether. A noticeable feature was, that the aperture at the bottom of the pot was permitted to remain of the usual size, and not enlarged according to Mr. Rivers's directions. The trees were all well mulched with moss, and have made a fine growth. The pears are carefully pinched in every

five weeks. Water is given every other day, and the syringe used daily in the evening, an abundance of air being permitted at all times. The next division embraces the peaches, of which there are 260 pots making a most luxuriant growth; here are to be seen peach-trees growing in wire-baskets, surrounded with moss and trained in every imaginable shape.

Mr. Chamberlain is entitled to the credit of having been the first to grow trees in hanging baskets; some of the peach-trees are trained as espaliers over the back walk. The same treatment is given them as the pears, except that they are left unpinched, the pinching off of the terminal buds having been found to burst the fruit-buds and destroy the prospect of the next season's crop: the branches are intended to be tied down, and the tree made to assume a pyramidal shape.

In the next apartment we find 200 cherries, 100 apricots, and 60 plums, all freely pinched in, and trained into pyramidal shapes. A number of apples on the Paradise, in eight-inch pots, together with figs and strawberries, complete the assortment; but as curiosities, currants, raspberries, and even filberts are found cultivated in pots. The varieties of strawberry to which the preference is given, are Boston Pine, Wilson's Albany, Jenny Lind, and Scott's Seedling. On the back wall are the potting room and the pot rooms for keeping the pots together, with rooms for assistant gardeners, and mushroom pits. The mushroom spawn is procured from a New York house, and grown in the dark: about six weeks after planting, the mushrooms are ready for market, and the demand is good.

A number of turtles and frogs are kept among the pot trees, and are found exceedingly useful in devouring numerous insects. The arrangements for watering are very complete, and force pumps and hose so introduced that no tree is likely to be overlooked.

In the greenhouse were found a number of Bananas just imported from Cuba, in fourteen-inch pots, ready for forcing. The fruit is intended to be forced, and under Mr. Chamberlain's care we should have no fear of the crop, he having had the benefit of two years' experience with Mr. Thomas Rivers, of Sawbridgeworth, England. The cost of his buildings was about ten thousand dollars.

[Dr. Norris has moved the spirit within us by his account of Mr. Lawrence's Orchard House, and we are strongly tempted to go to Newport to see it. It must be a grand affair.—Ed.]

ROSE-COLORED CHINESE WINTER RADISH.

(See Frontispiece.)

BY THE EDITOR.

According to the *Floré des Serres*, this handsome radish was brought to notice in Europe by the Abbé Voisin. We procured some seed of it from Commodore Perry just after his return from Japan, whence he brought it. We have since grown it to the neglect of the common Black and White Spanish, preferring it to either. It is a very pretty radish, and our *frontispiece* is a faithful representation of it, except that it should be a shade lighter. It grows to a good size, is firm-fleshed, and almost as mild as the

common spring radish ; though we are inclined to think its mildness will vary somewhat in different soils. It is somewhat difficult to pull, as nearly the whole root grows beneath the surface. The seed may be sown any time during the month of August, and the root is edible from the time it is about half grown. The young plants should be thinned out, so as to stand some four or five inches apart. The mature roots should be taken up on the approach of frost, and placed in the cellar, where they will keep till spring. The seed of this radish is now advertised by some of our principal seedsmen, and it is well worthy of a place in the garden.

THE AUSTIN STRAWBERRY.

BY THE EDITOR.

A few days after penning our statement respecting the Austin Strawberry last month, a large plate of it was placed on our "table," and we continued to receive samples of it from time to time up to the 14th of July ; a somewhat prolonged season, during which we had abundant opportunities to judge of its merits. It did not equal our expectations in point of size ; but we are informed that it is not so large this season as it was last, which must be owing to its treatment, since the present season has been a favorable one for large berries. Our engraving was taken from one of the largest



berries we could find. In regard to its productiveness we can say little, having seen only a few plants of it, producing from twenty-five to thirty berries each. It is a large, vigorous plant, with a stout, upright fruit stalk, the leaves, however, being rather narrow. The following is our description : *Fruit* large, varying in form from roundish to conical, sometimes flat, occasionally necked, and uniformly with a large core. *Color* pale scarlet. *Seed* brown, slightly imbedded. *Flesh* white, somewhat soft and dry, acid, and deficient in high flavor. *Calyx* large, many parted, and persistent. *Flowers* staminate. We have no doubt that it is a seedling of the Iowa.

CELERY—TO GROW AND PRESERVE THROUGH WINTER.

BY FOX MEADOW.

Mr. Editor: I have often found it difficult to preserve this vegetable through the winter, and have no doubt that others have too. We have often grown it very fine in trenches or single rows, and then in the fall of the year, just before hard frost comes, taken it up and placed it in a cellar, in rows, and covered it with sand or earth; but it invariably failed to be good for much through the winter, either tough and stringy, or rotten, especially the latter, if it got a little frost on it previous to taking it up in the fall.

Now repeated failures make what some people call good practical gardeners; but we think it makes experienced gardeners, if we do happen to get it at some one else's expense. We presume every one knows how to grow celery, therefore it will be useless to talk about that which is already known. We called the other day upon a friend of ours who is a stirring amateur, reads every letter of the Horticulturist, and several other periodicals into the bargain, including the world-renowned "Gardener's Monthly." *He had got a new idea.* "Good," I replied. "Well," said he, "come and see my celery plot. There, that is on a new and scientific plan. Do *you* ever read the Horticulturist?" he inquired. "Sometimes," said I, "when the post-office department *thinks proper* to send it me." "Well, sir, *this* is what they call the '*Flat culture*' system. What do you think of it?" "Think it is a very appropriate name for *this you* have been doing." "There, that is just like all you professional men, always laughing at us amateurs. You think you *know enough*, without reading and properly studying an article to understand its theory or philosophy. Now I know you have not read that article on *Flat Culture*, or else you would not laugh so. You see the philosophy is good—a labor-saving principle—a dollar-saving principle—a principle by which these celery plants can grow and be supplied with water in the hottest and dryest weather. Here is the advantage derived from science over our common plodding practice". "Ah, I was not aware of this." "I *thought* so. You see, the philosophy is this:

"The leaves of plants condense the moisture of the atmosphere, and in different modes shed it on the ground, but principally by means of the stalk, that is, the water runs down the stalk to the root; but if you *ridge up* the earth around the stalk, of course the water is thrown off." "Where to?" "Anywhere. It can't get to the roots if there is a ridge of earth on each side of it"

"*Oh, I did not know.* Well, sir, you have not shown me yet where the great amount of *saving* is made." "True: you know the old-fashioned way of digging trenches and filling them with manure, etc., and the constant bother of earthing up with soil, to have it all froze down and become rotten some day. Again: the absurdity of earthing up the celery all the time it is growing, to keep it eternally dry, when it is said that the plant originally belonged to the bogs and quagmires, which naturally suggests a plentiful supply of water rather than barn-yard manure; so upon this principle I have selected this good piece of ground, dug it up well, put in no manure, made the ground perfectly '*Flat*,' planted the celery out in rows two feet apart, and don't intend to earth up at all; and when the plants do not condense

water enough from the atmosphere to supply their needy wants, you see, under this '*Flat system*,' why we can pour on them, or over them, just so much as we please. Here is where the money is saved—no manure—no ridging up." "But about the blanching ?"

"Oh, take it all up and keep it in a dark cellar, and it will soon turn white enough for use. But *you* do things rather different from most people. How do you do it ? Old ridge, though, I suppose."

"Not just that, for I agree with you or your theory in several points. First, then, it is true that celery is half an aquatic. In the second place, the earthing up keeps it dry, or rather prevents water being applied artificially to the root ; and in the third place it prevents the foliage and stems from fulfilling their natural offices, condensation, absorption, &c., which is highly requisite to increase the size of the stem, which forms the bulk of the plant.

"All this is rational logic ; but when you advance the theory of the farmer who manured all his farm by a *special fertilizer* he carried in his waistcoat pocket, I also believe you will be like him in bringing home all the crops in the other. But I will compromise this matter with you in relation to growing celery. First, then, to prepare a bed, we measure off, say six to twelve feet wide, and run this width as long as convenient ; then throw out on each side the soil to the depth of six to nine inches, and fill up the trench nearly to its surface with thoroughly decomposed manure, and start at one end and thoroughly incorporate soil and manure together ; plant out the plants say nine inches by twelve on this surface, and thoroughly soak the whole with water ; if the weather is very hot, shade for a few days. Now I want you to understand the process that is to follow this, and adopt it at once, for we are about publishing this THEORY, *and of course it will be copy righted*, and can not be afterwards used without special permission :

"Form an embankment twelve inches high all around this trench, and keep it constantly saturated with water. If manure water, so much the better. Have not got it ? Then put guano in the water and make it ; for depend upon it, 'Good things come out of good conditions.' As the plants grow, keep them loosely tied up with bass matting, and rub off all the young suckers that grow out at the base of the leaves. The very small leaves or stems at the bottom of the plant, should be taken off also ; this facilitates the removal, and enables you to watch the growth of suckers, which if left on waste the substance and deteriorate the growth. You will remember the *trench must not be allowed to become dry*. It should be always like what the little boys call '*puddle*.' If proper attention is paid to this point, and also to planting it out early, celery can be grown to a very large size before the month of November. It should not be earthed up at all till about three weeks before it is required for use. Four weeks' time at the utmost, will blanch it as white as a lily. In order to blanch it, of course the soil from the sides is thrown between the plants and nearly up to the tops of the leaves. So soon as the leaves fall from the trees, we collect them and cover these beds *entirely all over*, about twelve or eighteen inches thick, placing over them a few corn-stalks to prevent the wind blowing the leaves away. From these beds you can dig *sweet, crisp* celery all the winter ; not a particle of frost near it ; and in April and May we often see the white stems pushing up through the leaves far better in every respect than any celery you can get in the fall. We have seen single sticks of celery grown this way, after being washed and dressed for table, weigh EIGHT POUNDS"!

"You have?" "Yes, sir." "Well, I will tell the Editor of the HORTICULTURIST that the first time I see him."

[We take peculiar pleasure in recording the above as the "first fruits" of our article on "Flat Culture." Growing Celery in this way had not occurred to us; but its advantages, to our apprehension, are manifest and decided, and we shall make a bed accordingly. Fox Meadow did just right in coming to the editor, and telling him all about it, for in this way he has told it to thousands. A good spirit moved him then, whatever kind of spirit may move him at other times. And then, too, the humor; that, certainly, is not on the *flat* system!—ED.]

A BEAUTIFUL HOME.

BY R. G. PARDEE.

THE eastern bank of the Hudson River, for many miles above New York, is lined with hundreds of splendid country seats, adorned with skill, taste, and wealth. Occasionally we find one surrounded with many fair acres; but, for the most part, the choice places are adjacent to flourishing villages, and ordinarily comprise not more than an acre or two. The fact is quite apparent, that the people of this country have generally too much land for their pleasure-grounds; more land, in fact, than taste and skill; and there is many a man who could honor himself in the care of a small place, that would as surely dishonor himself in his awkward attempts to conduct a large one.

It was my good fortune to visit one of these smaller villas about the middle of June, which I think deserves an honorable mention. It includes scarcely more than two acres of what was formerly an abrupt, nearly useless side hill, and yet in a few years it has been so intelligently and so thoroughly improved, that now it is one of the finest of those gem residences on the noble Hudson. Here my excellent friend spends his intervals of an active business in the bosom of his happy family.

If attraction thrown around one's own home is, as is said to be, a bid for children to remain at home, as a lavish expenditure on dress and equipage is said to be to go abroad, then the investment is a good one, and he will have the gratification of winning his little boys and girls from the excitements of the gay city, the club-house, or the giddy dance; for I hardly know a single country seat of any size this side of *Henry W. Sargent's, of Wodenethe*, that has so many well-selected, rare, and beautiful plants to adorn the grounds.

For the last six or eight years he has added every spring the most liberal collections from our best catalogues, and last fall I told him I thought he had so well filled his grounds that he could afford to rest on his laurels for a year or two. But no: this spring he presents large invoices from Europe of rarer and more costly plants than before, and he has made abundant room for them all. A few words as to the manner by which this was done.

On one or two of the abrupt terraces, in little nooks around the summer-houses, he has elaborated the finest specimens of rock work that it has been my fortune to see in this country. In a marvellously small space of ground he has provided sittings for three thousand plants, and already those seats are pretty well occupied.

A part of the rock work was arranged for plants that love the deep, dense shade ; a little further on a little sunlight was admitted, while further along still it was arranged for the bright children of the sun—for such as could luxuriate in his densest rays. One portion of the soil was deep and rich, adapted to plants that love such liberal treatment ; another portion not so rich or so deep, and another part with only a little leaf mould and rock crevice for such as are content with that rare supply.

I cannot undertake to enumerate the plants I saw, or even the rarest, but as a somewhat liberal list may be desirable in this connection, I will say that I admired the fine healthy specimens of Farfugium grande, Berberis Darwinii, Japan Berberry, Bambusa falcata or Himalayan Bamboo, Double White and Yellow Furze, Clematis viticella, venosa, and purpurea, and Clematis lanugenosa pallida, Chusan Palm, Alpine Pinks, Campanula alpini, Sempervirens (4 var.), Sedums in var., Itea Virginica, Spergula pilifera, Silver-striped and Gold Privet, New Zealand Flax, Saxifrages, Variegated Juniper, Prince Albert Yew or Cephalotaxus Fortunii, Stauntonia latifolia, Skimmea Japonica, Pampas Grass, Solidagos, Alyssum saxatile with variegated leaves, Aconitum pyrenæum, Aquiligea in var., Asperula odoratus, Cornus, Canadensis, Coronilla minima, Draba eizoides, Epimedium alpinium, Gentiana acaulii, Gypsophila prostrata and elegans, Lychnis in var., Oxalis floribunda and rosea, Saponaria, Silene in var., Thymus azureus, Veronica montana and saxatilis, Spiræa ulmaria variegata, Vincas, etc.

From the wild woods around here I saw he had gathered fine specimens of Ferns, Violets, Columbines, Blood Root, Mosses, Arums, etc. In the basin of one of the ledges of rock work, he has prepared a nice Garden Aquarium, filled with aquatic plants, fishes, etc., with the water running through it. I have made my list so long that I will not speak of the abundance of healthy fruit-trees, grape-vines, and shrubs, well selected, well trained, and well pruned, which I saw, neither will I enumerate the choice evergreens, trees, and plants which adorn this beautiful place. But I must refer briefly to the large fine borders of magnificent Rhododendrons, Azaleas, Andromedas, Hollies, etc.. in great variety and beauty, which lie beneath the large, beautiful Tulip Trees and the Oaks, the Hickory and the Chestnut, on the lawns. Few seem to be aware as yet of the splendor of those shrubs when well cultivated in the shade, in a deep border of sand and leaf mould in equal parts.

On the lawns, besides a variety of weeping and variegated trees and plants, I saw a fine large specimen of the *Silver-striped Turkey Oak*, probably the handsomest in the country ; also the Variegated Holly, and the Laurel-leaved, Scotch, American, and English Holly, and the Myrtle-leaved Kalmia. The new Variegated Ivy, the Variegated Cedar, Gold and Silver-striped Chestnut, Variegated Elder and Ash, True Ligustrum Japonica, etc., etc. But I forbear. I think I have by this time at least demonstrated that a small place well tilled is better by far than a large place indifferently cultivated.

CHICCORY—ITS CULTIVATION AND ITS USES.

BY F. A. NAUTS, NEW YORK.

Chiccory, Succory, or wild Endive, (Chicorium intybus,) is a perennial plant, with a large, very long, simple tap-root. The first year it produces

only numerous radical leaves, six to eighteen inches long, two to four inches broad, narrower at the base, and serrated more or less. In the spring of the second year, a stalk shoots from the centre of the leaves, three to six feet high, with smaller leaves than the radical ones, branching, and bearing in the axilla of the small leaves pale blue, as well as azure-blue flowers, about three-quarters of an inch large. These flowers bloom successively for a long time every morning, and shut before noon. To these succeed oblong seeds, surmounted with a little scarious crown, and contained to the number of fifteen to eighteen in a common calice. It grows well on almost all soils, but particularly in those of a light sandy loam, the deeper the better, for in such the roots will attain the largest size.

The roots and leaves of chiccory have been used in medicine, as tonics and depuratives, to re-establish the appetite, promote diuretic action, &c. In Europe it is much cultivated in gardens for its leaves, which are in great request to eat as a salad, when young, and for which purpose the roots are taken up and planted in barrels or boxes in a cellar, where the leaves that shoot out of the crown become white, etiolated, and very crisp and tender.

This plant makes a most valuable fodder, which cows, horses, mules, oxen, or sheep eat readily, and it is largely cultivated for that purpose, to be eaten as a green fodder, particularly by cows. For this purpose it is sown in the spring, after a good plowing, broadcast with oats, at the rate of four or five pounds to the acre, so that the leaves speedily cover the ground and smother the weeds, and by which the leaves are mutually held upright, so as to be easily mown. The seed can be sown in the fall as well, but then the plants are apt to shoot to seed the next spring before the roots have got a large size, and the crop of leaves is smaller. That sown in the spring will give two to three cuttings the first year from July until winter, and four to six cuttings the next year, and produce at each cutting about a ton of excellent fodder; or it can be pastured. It will shoot up after each mowing, no matter how dry the season may be; and no plant will bring so large an amount of fodder per acre, except perhaps Lucerne, which is more difficult as to quality of soil and culture.

But chiccory is much cultivated in Europe chiefly for the roots, which constitute its most valuable use, and for this purpose they should be taken up at the end of the second year; as the object is to obtain the largest roots, a good deep soil should be chosen, and the seed sown thinner than for fodder; or in drills six to eight or twelve inches apart, so as to hoe and weed them the better, in order that the roots may acquire their greatest dimensions.

A few years ago I took up some roots that had been growing for three years in a light, sandy, deep soil, not manured, that were about three feet long, and at the collar as thick as my wrist; one acre of such roots would produce at the rate of nearly fifty tons.

Thus when it is intended to raise chiccory for its roots, for making the CHICCORY or SUCCORY of commerce, they should be taken up at the end of the second year, cutting or mowing off the leaves first at the collar; and as chiccory is not affected by the frost, they can be left in the ground as long as the open state of the winter will permit; or when it is feared that the severity of the winter would prevent the free taking up of the roots, they can be taken up at the end of the fall and stored in sand, from which they can be obtained at all times during the winter. When taken up they must

be washed, dried, then sliced in pieces, and roasted in an oven, till they acquire the color of roasted coffee or chocolate, and become brittle ; they are then ground fine, packed in rolls or squares of paper, containing from one half to one pound each, or packed loose in barrels or casks. In the drying and roasting the fresh roots will lose twenty-five to thirty per cent.

Let us now suppose one acre to produce at the end of two years twenty tons of roots, or 40,000 lbs. ; the loss by drying and roasting thirty per cent.; this will leave a net produce of 28,000 lbs., which, at 2½ cents per pound, wholesale price, will bring $700. By deducting for all expenses of seed, labor of plowing, harrowing, sowing, taking up roots, interest on land, washing, drying, roasting, grinding, packing, labels, casks, carting, etc., the sum of $150, which is rather a large estimate, it still would leave a profit of $550 per acre, independent of the fodder obtained for two years, worth between sixty to seventy dollars at least.

Chiccory has been for many years, and is now, extensively imported into the United States from Belgium, France, Germany, &c., and is much used here to mix with coffee in different proportions ; some mixing one fourth, while most mix one half, and some use it exclusively as coffee ; the use of it is now become universal, and the importations of it increasing.

It abounds in a bitter juice, possessing a tonic property, and has a distinct smell of liquorice ; its empyreumatic volatile oil, evolved during the roasting, exerts upon the system a diuretic and gently exciting influence, and reëstablishes the appetite ; taken in moderation, it is perfectly wholesome.

I shall be glad to impart any additional particulars that may be required.

[We do not believe in adulterations of any kind, though chiccory is one of the most innocent. It is grown among us at present chiefly as a salad. It is now, however, so largely in demand, that in many sections it might be extensively grown with profit, and is therefore worthy of attention as a farm crop. We should not, however, expect to realize the sums above named.—Ed.]

WILD FLOWERS—THEIR CULTIVATION, ETC.

BY C. N. BEMENT.

The cultivation of flowers affords the most innocent and refined pleasure. It is a gratification, a pleasure cheaply purchased, and within the reach of all—alike accessible to the rich and the poor. It enlivens the young mind, and invigorates the feeble frame. The moral lesson taught by flowers is worthy of attention. Their beauty ripens the taste and improves the heart. The love and cultivation of flowers is evidence of a refined mind, and affords food for reflection. "Consider the lilies of the fields, how they grow ; they toil not, neither do they spin ; yet I say unto you, Solomon in all his glory was not arrayed like one of these."

The great and increasing taste for the cultivation of flowers has induced us to devote a few pages to the subject, more particularly to the cultivation of our native wild flowers. The interest of many cultivators has been drawn away by foreign productions, while our natives, many of which are far superior in richness, have been left to bloom and fade in all their beauty, "unknown and unseen, to waste their fragrance on the desert air."

It is our present purpose to endeavor to awaken a greater zeal among cultivators and amateurs, for the growth of some of the brilliant plants which deck our fields and woods. Few persons seem to appreciate or even know to what perfection of culture many of our wild flowers may be brought in the hands of skilful gardeners.

Here we can not help remarking, that many flower-gardens are almost destitute of bloom during a great part of the season, which could be easily avoided, and a blaze of flowers kept up both in the garden and pleasure grounds from April to November, by introducing from our woods and fields the various beautiful ornaments with which nature has so profusely decorated them. Is it because they are indigenous that we should neglect them?

Floriculture and other branches of ornamental gardening have hitherto been less attended to in this country than those of a more useful kind—the rearing of fruits and culinary vegetables. A change, however, for the last few years has taken place of a more favorable character. The hand of nature has scattered the richest beauties of the flowery world around us in every direction, and there is nothing to prevent us from ornamenting our gardens and pleasure-grounds with native plants and flowers from every wood, from every field, and from every brook-side to which the eye can turn.

Among the great number of wild plants found in the vicinity of Albany, we have succeeded in cultivating some of the following named varieties:

Cardinal Flower—*Lobelia cardinalis.*—Among other plants remarkable for elegance is the Cardinal Flower, which in the last summer months may be found along our swampy grounds, near fresh water streams. From its great beauty and showy appearance it is a great favorite in Europe, and is generally cultivated in pots. It is a perennial plant, growing in a single stem from two to three feet high; leaves from three to five inches long and an inch or more in breadth, with a long tapering base. Flowers of a bright scarlet color, and very showy. Although it is wild, and is generally found in marshy or wet ground, and borders of rivulets, it grows readily when transplanted into a dry soil in a shady position. It is in flower from August to October. We have removed some of these plants to our garden in the month of April, and planted them in a moist, shady place, where they grew and flourished finely, producing abundance of splendid flowers the same season, and were much admired by all who saw them.

Small Fringed Gentian—*Gentiana detonsa.*—This species grows in various parts of the country. It is a wild flower of extreme beauty, and worthy of cultivation. It is found on lime-stone rocks, Goat Island, Niagara Falls, Irondequoit, and we have found it on the borders of the Norman's Kill, near Albany. It is supposed to be annual. Flowers yellow at the base, with a bright blue top beautifully fringed like the pink. It is a very pretty plant, and would show well in the garden.

Red Lily—*Lilium Philadelphicum.*—Of all the tribes of wild flowering plants, the Lily, in our estimation, stands preëminent. It is noticed in the sacred writings as of great brilliancy and beauty.

The Red Lily may be found in bushy places, on the borders of woods; we have found it growing in great abundance on the sandy plain between Albany and Schenectady. The stalk rises from 2 to 2½ feet high, supporting one solitary flower. It blooms in June and July. The color varies from

dark to light red, with a tinge of yellow. This is a highly ornamental plant, very little inferior, and not much unlike, the Tiger Flower, for which we have paid one dollar for each plant. It deserves a place in every garden. Number of flowers increases by cultivation.

Yellow Lily—*Lilium Canadensis.*—This is common in all parts of the country, and is found in moist meadows. Flowers in June and July. It grows from 2½ to 3 feet high, bearing from one to five or six nodding flowers spotted inside with dark purple. It is a bulbous-rooted plant, and we have transplanted them when in flower, with good success, in our garden, growing in full vigor, bearing from five to six beautiful flowers in each stalk.

Large Yellow Ladies' Slipper—*Cypripedium pubescens.*—This much-admired flower is found in moist, shady woods. There are three varieties of this species—some rather rare. "The root of this plant consists of numerous thick fibres. Flowering stem simple, and rising from one to two feet high. Flowers large and showy, solitary, sometimes with a large foliaceous bract at the base. Petals greenish, stained with purple, and from one and a half to two inches long. Upper sepal rather broadly lanceolate; the two lower ones commonly united nearly to the tip, but sometimes distinct. Petals lanceolate linear, undulate and twisted. Lip yellow, one to one and a half inches long, somewhat obovoid, much inflated."

Small Yellow Ladies' Slipper—*Cypripedium parviflora.*—This and the preceding are very nearly allied, and many of our botanists do not consider them distinct. In character it does not differ materially. "Flowers purplish-brown, mixed with green. Petals much narrower and rather larger, undulate and twisted, green-spotted, with purplish brown, or sometimes wholly purplish. Lip one to one and a half inches long, somewhat flattened above and below, the sides swelling out. Flowers in May and June." Rare; found in woods and swamps; sometimes on hillsides.

Purple Ladies' Slipper—*Cypripedium acaule.*—This plant is found in the vicinity of Albany, in woods, in both dry and moist situations; flowers in May. "Roots thick and fibrous. Leaves from three to six inches long, from one to one and a half inches wide, at first erect, but finally spreading. Stalk rises from eight to twelve inches high, flowers pendulous, with a shallow fissure or indentation in front, greenish mixed with purple."

This plant bears cultivation remarkably well, and improves by care and attention. We have had no difficulty in cultivating it, and consider ourselves well paid in its splendid show for all our trouble.

Purple Side-Saddle Flower—*Sarracenia purpurea.*—Whoever may have occasion to wander out among the numerous sphagnous swamps that diversify the sandy plains in the neighborhood of Albany, any time during the month of June, will not fail to have his attention directed to singularly beautiful clusters of reddish purple flowers, each one nodding on a solitary footstalk, that ascends from a whorl of far more singularly constituted leaves. This is the *Sarracenia purpurea.* It is exclusively an American genus, and is composed of six well-defined species, five being confined to the Southern States, while the present one appears to be equally disseminated from the shores of the Mexican Gulf, as far north as Hudson's Bay. "The flowers are large, and of a deep reddish purple color, with the petals greatly incurved, while the pale yellow stigma occupying the centre, expands in such a manner as effectually to conceal the more important organs of fructification from the sight. The leaves when mature are of a fine green color,

more or less stained with purple, and beautifully veined with a tint of a much deeper hue: they have the form and appearance of some antique Roman lamps: indeed, so striking is the resemblance, that had we been informed that this ancient people possessed any knowledge of this singular plant, we should have had little hesitation in assigning to it a suggestive original to their skilful artificers. The cavity, or reservoir, as it has not inaptly been termed, which occupies the centre of the leaf, is at all times partially filled with water, originating from rains and dews, into which numerous species of coleoptera and other insects are not unfrequently found, which have met their death in pursuit of a saccharine concretion, that copiously exudes from their internal surfaces. By this beautiful provision of nature, these plants are abundantly supplied with moisture when the excessive heats of summer prevail for any considerable time, and create unusual droughts; they are likewise thus furnished with the usual amount of animal food which they may necessarily require for their sustenance." The manner in which these insects are imprisoned, is thus described by Dr. McBride: "It may be sufficient here to remark, that the throat or orifice of those leaves is generally covered with a saccharine secretion or exudation. Immediately below the throat, for the space of nearly an inch, the surface is highly polished, while the lower part of the tube is covered with hairs all pointing downwards. When an insect, attracted in the first instance by the secretion of the plant, or perhaps even by the water, descends, as it easily can do, along the declining pubescence, it appears incapable of ascending by its feet alone, and can only escape by a flight so perpendicular as to surpass the power of most insects. Whenever they touch the bristly sides of the tube they are precipitated again to the bottom, and have to renew their efforts; and many insects even of a larger size perish in this arduous and hopeless struggle."

These plants are perfectly susceptible of cultivation; all that is required is, to remove with them a sufficient quantity of the decomposed vegetable matter and sphagnum in which they are found: place them in any partially water-tight vessel, and keep them saturated. These substances, when necessary, can easily be renewed.

Lupines—*Lupinus perennius*—an elegant and showy plant, a native of our dry hills, scattered all over certain parts of the country; well worth cultivation. Three or four sorts have been introduced from the north-west coast by Douglass. *L. polyphyllus.* The spike of elegant bluish purple flowers from two to three feet high, continues in bloom a month; common on our dry sandy lands; would make a fine show in a cluster or bed. There is another kind—*bicolor*—flowers white and yellow, and very sweet-scented; can be grown from the seed.

There are a great number of other beautiful native plants that are worthy of cultivation, which we may notice at some other time. We hope to succeed in introducing to the notice of our young readers a taste for the cultivation and study of the beautiful productions of our country. Three-fourths of the beautiful flowers, so highly prized in European gardens, are actually natives of America.

[We should really be glad to see some of our native flowers more commonly introduced into the garden, and improved; and while we think Mr. B.'s list a good one as far as it goes, we should hesitate about most of the Starworts, because of their intrinsic deficiencies. We have a long list of others much richer in all the elements of real beauty.—Ed.]

EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, &c., intended for the perusal of the Editor, and packages by Express, should be directed to the care of C. M. Saxton, 25 Park Row, New York. Exchanges should be addressed to "The Horticulturist."

Red Scuppernong Wine.—We are indebted to Dr. Wylie, of Chester Court-House, S. C., for a bottle of very delicate Scuppernong Wine—no, we forget; it was not the Doctor, it was "Annie," who sent it, and she, and not the Doctor, (we are very particular about this,) will please accept our best thanks. At first we thought it was just a little too sweet, but when we remembered who sent it, we didn't think so at all; on the contrary, we thought it was just right. We did not see Annie, for she had left for Saratoga before we called; but we know she must be both beautiful and good to send us such nice wine. It made our sanctum really cheerful for a time.

American Pomological Society.—We would again call attention to the meeting of this Society, to be held in Philadelphia on the 11th of September. The meeting will be held in the large Assembly Building, at the corner of Tenth and Chestnut streets. The large hall, 135 by 30 feet, will be devoted to the exhibition of fruit, and the smaller hall will be reserved for the business meetings and discussions of the Society. Every member and delegate should bring samples of fruit, and those who can not come should send by express. The accommodations will be ample.

Visits.—We recently made a brief visit up the Hudson, stopping at Dr. Grant's, Mr. Downing's, Mr. Sargent's, and other places. We made short notes by the way, but returned too late to write them out for the present number. They will appear in our next.

Cherries.—Dr. Grant, Mr. Prince, and others, will accept our thanks for fine collections of cherries, embracing several new kinds. Drawings of some of the latter, we shall give hereafter, with notes of comparison.

The Seventeen Year Locusts.—Much has been said about the harmlessness of these Locusts, which we were disposed to put faith in. Their history, undoubtedly, is a wonder; one of the most striking, indeed, in the whole range of insect life; but recent observation has compelled us to put them in the same category with the curculio, the wheat fly, the cut worm, and other destructive pests, to be destroyed without mercy. The woods in some portions of New Jersey look as if a fire had passed over them. The *ovipositing* of the Locust is not confined to the young wood of the present year, as is generally thought; we have seen innumerable instances of it in wood two, three, and four years old; we have also seen hundreds of young

pears, apples, ornamental trees, shrubs, &c., completely cut up by them, the incisions, in many of the young trees, being carried down the *body* of the tree to within a foot of the ground. Many of the limbs were dead, others were dying, and the probability is that many young trees will be entirely destroyed. It is too soon yet to speak confidently of the extent of the injury sustained, but it will no doubt be considerable. We hope that the trees, &c., in the breadth of country occupied by the Locust, will be carefully examined and the amount of injury noted, and that all the facts will be carefully put on record, so that the history of the insect may be more precisely known, and the necessary measures of protection taken when it makes its appearance again seventeen years hence.

PANSY SEED.—We are indebted to Mr. Dreer, of Philadelphia, for seeds saved from his prize flowers, of which we shall try to give a good account hereafter. Our readers will remember to sow their Pansy seed during August, September, and October. We shall have another good article on this subject next month.

FRUIT.—We are indebted to Mr. Chisholm for a fine collection of Pears. As there are more to come, (our mouth still waters,) we will speak of all together. Of two of them we shall give outlines.—To Mr. P. J. Berckmans we are indebted for Delaware Grapes and a fine bunch of the Brincklé. We have a drawing of the Brincklé in preparation, and will give it with our description.—From Mr. T. W. Field, good specimens of Doyenné d' Eté.—From Mr. C. A. Alvord, large and handsome Peach Apricots.

THE HAND BOOK.—This is an annual record of Agricultural and Horticultural statistics, &c., compiled from various sources by Wm. P. Shephard, proprietor of the Horticultural Agency, 198½ Water street, New York. It contains a large amount of useful information pertaining to plants, horticultural and agricultural publications, nurseries, &c., and will be valuable as a work of reference. The price is $1 00.

A PIANO FOR THE COTTAGE.—Why not? Where is music more musical than in a rural cottage? Messrs. Marshall, James, and Frazer have been making a small, cheap, neat, well-finished instrument, which they call the "Parlor Gem." It is a full-toned instrument, with a key-board of large compass, and might well have been named the "Cottage Gem." We should like to see just such an instrument in every "cot" in the land.

THE FARMER AND GARDENER.—This monthly comes to us for July changed to an octavo, certainly a better form than its old one. A. M. Spangler continues as Agricultural Editor, and William Saunders assumes the Horticultural chair; both are capable and experienced men. In its new dress and improved form, we hope it may meet with increased success.

A STRANGE COINCIDENCE.—Under this heading, a writer in the New York *Evening Post* states, that "several years ago Dr. Siebold introduced into Europe (from Japan) a flowery tree called *Pawlonia imperialis;*" and the "strange coincidence" is, as he states it, that this year, during the visit of the Japanese, "it blooms for the first time." The strangest coincidence is, that this article should have been copied, without comment, by a number of our horticultural and agricultural periodicals. The simple fact is, that the Pawlonia was introduced into Europe some twenty years ago, and soon after into this country. We think we saw it in bloom at the nursery of the Messrs. Parsons nearly fifteen years ago, and it is now a common shade tree all over the United States. Instead of the few trees "in several of the Fifth Avenue gardens," there were thousands in bloom at that time in the public streets and parks of New York, and all over the country, and they have bloomed for years past. We are confident that the article in the *Post* could not have been seen by Mr. Bryant, for we know him to be an intelligent horticulturist as well as a great poet.

HOLLYHOCKS.—We dropped in a few days since to see our friend, Andrew Richardson, Esq., and examine his double Hollyhocks, and were greatly delighted with what we saw; in fact, our companion, Mr. Miller, got a little ecstatic. Mr. R. has undoubtedly much the finest collection we ever saw, composed partly of importations and partly of seedlings. The following are some of the finest: Mrs. Blackwood, white; Wm. Hume, bright, glowing pink, the most splendid Hollyhock we ever saw; Tricolor, white, with crimson and purple stripe, and green edge; Shrubland Gem, yellow; Pourpre de Tyre, purple; Mrs. Ochre, yellow, with crimson center; Sir David Baird, purple; Captain Thompson, crimson and purple; Hon. Mrs. Ashley, pale pink; Beauty of Cheshunt, fine pink; Duchess of Sutherland, light pink; Beauty of Minden, splendid white; Cyrus, brilliant pink, and many others nearly as good. Among the seedlings the following are very fine, and, with two exceptions, equal to any of the above: Mrs. Richardson, bright pink; Carrie Saxton, dark purple; Debbie de Gray, bright pink; Lizzie, dark pink; Kate, bright rose; Minnie Miller, bright yellow: Peter B. Mead, beautiful claret. All these are full and of beautiful form, and abundant bloomers. They were grown in a large bed, and the effect was grand. We could hardly help wishing that Mr. Richardson was a florist instead of an amateur, so that these splendid flowers might be widely distributed. Mr. R. has a great many other choice things, such as very fine Sweet Williams, Phloxes, Chrysanthemums, &c., many of them imported last spring. The Phloxes were small, and only just coming into flower. Of older plants in bloom, the best were Mademoiselle C. Fontaine, satin white with a clear pink eye, very beautiful; Purpurea superba, a very fine dark purple; Mademoiselle Albertini, white, with pink eye; Madame Fontaine, fine light purple; Mrs. Gillon, white, with pink eye. Mr. R. has also a very large and choice collection of Dahlias, as he should have, as he is esteemed here unapproachable as a Dahlia grower. He has also a large number of seedlings. He has a penchant for bedding, and plants Zinnias, Lupins, &c., in masses very effectively. We noticed some beautiful specimens of the Clematis, and measured flowers of the C. lanuginosa pallida eight and three-quarter inches in diameter. We might fill a page with descriptions of other choice things, but our principal object was the Hollyhocks, and these we shall not soon forget. In the midst of so much that is enjoyable, our artist friend must pass life pleasantly.

TO NURSERYMEN.—We are requested to say by Messrs. Saxton, Barker, & Co., that they will receive at their store for distribution the Catalogues, &c., of the various Nurserymen, Seed-sellers, &c., the expenses, of course, to be paid on all such parcels sent to them. This is a liberal offer. The store of these gentlemen constitutes the great head-quarters of the Agricultural and Horticultural world, and is therefore the best point from which to make such a distribution.

THE YOUNG FARMER'S MANUAL.—This work, announced a short time since, has just been published in good style by Saxton, Barker, & Co. It is devoted chiefly to the mechanical part of farming, such as fencing, building, plowing, selecting and using tools, draining, &c., and will be followed by another mainly devoted to the culture of crops, &c. It is a work of great value to the farmer, by an earnest, intelligent, and practical man. The illustrations are numerous, and form an important feature of the work. The author, S. Edwards Todd, is well known as one of our most successful agriculturists. The price of the work is $1 25.

CARRINGTON'S COMMISSIONAIRE.—The object of this journal, it is stated, is to "make known an agency through which non-residents can send to New York, and purchase any article wanted for individual use, or for dealears' supplies, either singly or by the quantity, from a shawl to a steam engine—a penknife to a piano." It is consequently a capital advertising medium. The reading matter is witty and racy to a degree. It is published at 98 Broadway.

FRUIT-GROWER'S SOCIETY OF PENNSYLVANIA.—We are indebted to the Secretary for the first annual Report of the proceedings of this Society. It is made up of reports of committees,

discussions, &c., divested of all superfluities, and is a record of much interest. We are glad to see it put in a permanent form.

PROF. HOPKINS' SCHOOL.—It will be seen by our advertising columns that Prof. Hopkins will open a boarding-school for boys in September at Metuchin. N. J. The object of the Professor is not only to give instruction in the usual scholastic course, but also to impart a sound knowledge of the theory and practice of Horticulture. This is a most worthy and commendable project, and presents peculiar advantages to farmers' sons who are seeking to be educated in the duties of life. The Professor is well qualified for the task, being a ripe scholar and an experienced horticulturist, and we heartily recommend his school to the notice of all interested.

FARMER'S CLUB.—The Farmer's Club of the American Institute holds weekly meetings for discussion; and though occasionally the time is too much taken up with outside matters, it very often happens that useful information is elicited and good things are seen. At a recent meeting a committee reported the following as the five most profitable strawberries for general cultivation: Hooker, Hovey, Longworth, Wilson, Jenny Lind. Mr. Prince had a case of his seedlings, which were also noticed, as well as a large number from Mr. Fuller. Mr. Prince had on the table a very fine lot of Pæonies, and Mr. Hite made a very fine show of the Wilson. The Austin was also on exhibition, our opinion of which will be found elsewhere.

AMERICAN GLIMPSES.—Under the title of "American Glimpses of Agriculture in Great Britain," Mr. Tucker, of the *Country Gentleman*, has given us a brief record of his recent tour in Great Britain. Mr. Tucker is a close and discriminating observer, and has given his readers a better and more comprehensive idea of the present condition of Agriculture and of agricultural life in Great Britain, than can be gleaned from a score of ordinary books of travel. However much our own practice may, and must in some respects, differ from that of Great Britain, no intelligent farmer can read this little work without adding something to his store of knowledge.

FRUIT-GROWERS' ASSOCIATION OF WISCONSIN.—We are indebted to Secretary Willey for the Report of this Association for the year 1859. It is a carefully prepared document, containing a large amount of useful information by experienced Horticulturists, well worthy of preservation in a permanent form. Such reports constitute an important part of the history of the times.

CATALOGUES AND BOOKS RECEIVED.

Descriptive Catalogue of Carnation Pinks, grown and for sale by Andrew S. Fuller, Yates Avenue, near Myrtle, Brooklyn, L. I.—We recently saw this collection, and found it exceedingly choice. Some twenty-five are monthly. At $10 a hundred nobody need be without a bed of choice Carnations.

Fourth National Exhibition of Horses, at Springfield, Mass., Sept. 4, 5, 6, and 7, 1860.—A very liberal prize list, but why not a substantial token for the fastest *walking* draft horse?

Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, Seedlings, Grape-Vines, Roses, etc., cultivated at Mark D. Willson's Nursery, West Bloomfield, Ontario Co., N. Y. N. R. Willson, Mark D. Willson, proprietors.

Old Colony Nurseries, Plymouth, Mass. B. M. Watson's new abridged wholesale Trade Catalogue for 1860, of select Trees and Plants for Suburban Residences, containing all the really valuable new Fruits and Flowers of recent introduction, at reduced prices, without further discount.

Descriptive Catalogue of Trees and Plants grown at the Walworth Nurseries. T. G. Yeomans, Proprietor, Walworth, Wayne Co., N. Y.

The Life of Jacob Gruber. By W. P. Strickland. New York, Carlton and Porter, 200 Mulberry St.

List of Premiums and Rules and Regulations for the Ninth Annual Fair of the Indiana State Board of Agriculture, to be held on the new grounds, near the city of Indianapolis, commencing on Monday, October 15, and continuing during the week. Open to the world.—A very liberal and well-prepared list, the prizes amounting to the handsome sum of $12,000. This ought to secure a good exhibition.

Premiums and Regulations for the Eleventh Annual Fair of the Ohio State Board of Agriculture, to be held in the city of Dayton, on Tuesday, Wednesday, Thursday, and Friday, the 25th, 26th, 27th, and 28th days of September, 1860. Competition open to other States.—Another liberal and well-digested prize list.

Catalogue of the Officers and Students of the Farmer's High-School of Pennsylvania.—The object of this institution is to combine study and labor, and fit young men for some useful purpose in life, but chiefly to make them intelligent and thorough farmers. The object is a very commendable one; such institutions are not half as common as they should be.

The Journal of Rational Medicine. Edited by C. H. Cleaveland, M.D. July, 1860. P. C. Browne, Cincinnati.

Correspondence.

PETER B. MEAD, ESQ., DEAR SIR:—I wish to say something in regard to the Newtown Pippin apple, because some people are forever crying that this and that variety of fruit is "run out."

Each class of fruit requires an appropriate soil, comprising therein the constituents naturally adapted to its developemnt; and there are even varieties of the same species of fruit which require a variation in soil.

The Newtown Pippin delights in high culture with manure and lime, and it is the neglect in culture or the lack of the ingredients that renders the tree deficient in vigor and unproductive. I am well satisfied that this variety can be cultivated with as much success and that it will grow with as much vigor, as it ever did, provided it receives the proper attention.

It is, however, the natural character of both the varieties to grow slower than many other kinds, and consequently to attain to less size in an orchard than most others of the same age. The roughness of the bark of the green variety, which is the kind mostly cultivated, gives to the trees an unthrifty appearance, when, in point of fact, this is but a natural characteristic.

I have felt impelled to make these remarks, after inspecting an orchard planted in 1846–47. This apple has some peculiarities which I have not seen noticed. One is that the seeds do not come from the core *clean*, but have more or less particles of the core adhering to them. The quality of the fruit varies very materially according to the soil, climate, and treatment. When in its highest state, it has a thin, *smooth*, and polished skin, with tender flesh; others grown under less favorable circumstances, have a rough skin, the texture of the flesh more tough and breaking.

Yours very respectfully,

Flushing, July 13th, 1860. W. R. PRINCE.

[We are not among those who believe that fruits "run out," in the common acceptation of that term. We simply state our opinion, without attempting a discussion. We are not so decided, however, in our belief in the two varieties of the Newtown Pippin called Green and Yel-

low. We have seen changes in the same orchard which have staggered our belief on this point How far variations in soil, locality, age, &c., are concerned in such changes, may form an interesting topic for future discussion.—Ed.]

Editor of the Horticulturist:—The weather is very warm and trees of every class growing very fast; just rain enough and none to spare. Three pounds of Norway Spruce in seed, but all up very fine: think every seed grew; have thus far shaded with cut straw. Will the mulch and the cloth be sufficient protection for the young plants during the entire summer? or must we put thicker shade over them?

On page 251 current volume you say, "Pears, Plums, Nectarines, &c., can be grown in pots by anybody who has a greenhouse or grapery and a good cellar, or even the *latter alone.*" Can peaches be raised in this way by wintering them in the cellar and keeping them there as long as possible without starting, then sinking the pots in the soil or borders as you describe? Peaches are "no go" with us here, unless they can be made "movable beings." The fruit crop of the State promises well. Apples and Pears, especially the latter, exceed anything I have seen in the State before. And if nothing new comes up, Wisconsin may want a "niche" in some by-place of the American Pomological Society held in Sept. next. Accompanying this I send you a copy of the Wis. Fruit-Grower's discussion held in Whitewater, Jan. last.

Yours truly,

"76" *Nursery, Madison, Wis., June* 21, 1860. O. S. Willey.

[Yes, your shade will be enough, and more than enough by and by. Remove it by degrees as the weather grows cool in the fall to harden the plants. Let the mulch remain. Peaches can be raised in the way described, and in great perfection. You will be greatly delighted with the result. Be sure to begin with "maiden" trees. We shall look for Wisconsin in Philadelphia in September. Do your best.—Ed.]

Correction.—Ed. Hort.: Last autumn I wrote an article for your Journal giving authority for believing that the Isabella grape is not a native of the United States, but of Europe or the West Indies. Since then, on further evidence, I am disposed to think it is a form of our native Vitis labrusca, the parent of the Catawba and some other cultivated varieties. Those who have grown both the Isabella and Catawba, know that these grapes have so great a family resemblance as not to be specifically distinct in botanical language. They are both undoubtedly of the same parentage, and like other American grapes, are dicœcious-polygamous; differing in that respect from many European species.

I would by no means question the veracity of Dr. McRee, Judge Ruffin, Lespeyre, and other citizens of North Carolina. The explanation is this: Lespeyre is the first known cultivator of the Isabella. On returning from Europe via the West Indies, he brought a box of grape roots, some of which he probably obtained in the West Indies, and the Isabella may have been derived from that region; as the Vitis labrusca grows South, extending into Texas. It may also be a native of the West Indies. If not, the Isabella may have been taken there for cultivation and reconveyed by Lespeyre to the United States.

July 1, 1860. S. B. Buckley.

[Having fallen into an error, there is but one manly course left, and that is to acknowledge it. This Mr. Buckley has done, and we like him the better for it. Nothing can be more certain than that the Isabella is a native grape; the evidence is too plain to be doubted.—Ed.]

HORTICULTURAL SOCIETIES, ETC.

Horticultural Club of Poughkeepsie.—There is a Club at Poughkeepsie by this name, who hold frequent conversational meetings, and an occasional exhibition. They seem to be doing a good work, and we hope they will continue in it. In June they held their first public

exhibition, and it seems to have been successful and satisfactory. Edwin Marshall exhibited 48 varieties of strawberries; S. M. Buckingham, 7; I. H. Cogswell, 10; Stephen Uhl, 4; H. D. Myers, 5; H. & J. Carpenter, 4; H. L. Young, 2; T. Gregory, 5; G. C. Burnap, 4; H. J. Jewet, 1; A. Wilcox, 1; W. Creighton, 2; D. Fonterey, 2; N. C. Trowbridge, 1; E. K. Jones, 1; composing a very fine display. Hothouse Grapes were exhibited by T. L. Davis, E. Marshall, and Haggerty & Kettell. Cherry Currants were exhibited by E. Marshall, who also had 17 varieties of Gooseberries. S. M. Buckingham exhibited 5 varieties of Cherries, and Isaac Tice one. The Ladies were also on hand with Bouquets and Cut Flowers, the contributors being, Mrs. N. C. Trowbridge, Mrs. G. C. Burnap, Mrs. A. L. Pease, Mrs. Rosenkrans, Mrs. A. Wilcox, Mrs. T. L. Jarvis, and Mrs. A. Vankleck, but not a "single" Miss, unless it be Carrie Sherman, which does not appear. Perhaps they have no girls at Poughkeepsie. What a place it must be! No girls!

We understand that no prizes were awarded, and that the use of the Hall was offered gratuitously by Mr. Myers.

YONKERS HORTICULTURAL SOCIETY.—This young and enterprising Society held its first exhibition at Farrington's Hall on the 14th and 15th of June. The exhibition proved an auspicious beginning, and was a source of great satisfaction to the members and the public. We append a list of the prizes awarded:

FIRST CLASS.—*Greenhouse Plants and Flowers.*—The Committee awarded for the best general collection, a silver goblet to C. H. Lilienthal, Esq. Gardener, Timothy Ryan.

For the second best do., to Messrs. Strange. Gardener, A. Campbell.

For Choice Collections.—To William A. Hall, Esq., a Special Diploma. Gardener, John Lee.

To J. B. Colgate, Esq., a Special Diploma. Gardener, Patrick Ryan.

To Wm. T. Coleman, Esq., a Special Diploma. Gardener, Thomas Ryan.

To Henri Bussard, Florist, a Special Diploma, for specimen of Victoria regia.

To Nicholas Longwood, Esq., a Special Diploma.

The Committee deem worthy of particular notice in this department, the contributions from Robert P. Getty, Esq., Gardener, John Downing; Anson Baldwin, Esq., Gardener, William Tracy; and Thomas W. Ludlow, Esq., Gardener, Michael Prendergast.

SECOND CLASS.—*Plants and Flowers culitvated in the open air.*—For the best collection of cut flowers, a silver goblet to Henri Bussard, florist.

For the second best do., a silver goblet to Henry A. Swan, Esq. Gardener, James Slade.

For handsome collections.—To William A. Hall, a Special Diploma. Gardener, John Lee.

To Wm. T. Coleman, Esq., a Special Diploma. Gardener, Thomas Ryan.

To Robert P. Getty, Esq., a Special Diploma. Gardener, John Downing.

They also deem worthy of particular notice a beautifully arranged basket of flowers from Mrs. Charles M. Connolly.

Blossoms of Magnolia grandiflora from Mrs. John K. Myers.

A basket of flowers from Miss Kate Woodworth, and a vase of flowers with an ingeniously arranged jet of water springing up from its centre, from Mrs. Joseph Agate; also a box tree 160 years old, from the garden of Judge Woodworth, Manor Hall.

THIRD CLASS.—*Greenhouse Fruits.*—The Committee award for the best collection, a silver goblet to C. H. Lilienthal, Esq. Gardener, Timothy Ryan.

For the second best do., a silver goblet to James McBride, Esq.

FOURTH CLASS.—*Fruit cultivated in open ground.*—For the best collection, a silver goblet to Fred. S. Cozzens, Esq. Gardener, Andrew Noonan.

For the Second best do., a silver goblet to James B. Colgate, Esq. Gardener, Partick Ryan.

For the finest basket of Strawberries, a Special Diploma, to Jona. Odell, Esq.

For the finest gooseberries, a Special Diploma to C. H. Lilienthal, Esq.

For the finest currants, a Special Diploma to C. Cleveland, Esq.

They also deem worthy of notice the samples of wines from grapes grown in our own township, by Mrs. Archibald Baxter, and two fine specimens of cherries, which came in too late for competition, exhibited by Jacob Read, Esq., and Mrs. Dorley.

FIFTH CLASS.—*Vegetables.*—For the best collection, a silver goblet to William A. Hall, Esq. Gardener, John Lee.

The Committee do not award any second premium in this class, as, on account of the early season, the few collections exhibited are of about equal merit.

The following contributions are deemed worthy of special notice.

Jonn T. Warring, Esq., specimens of pie plant; James B. Colgate, Esq., cucumbers; Robert P. Getty, Esq., spinach and peas; John Davidson, Esq., turnips, onions, and radishes; the Misses Bell, cabbage and lettuce; James C. Bell, Esq., beets, best exhibited; Dr. Habell, asparagus, do.; C. Cleveland, Esq., beets and spinach; William T. Coleman, cauliflower and peas.

SIXTH CLASS.—*Articles of Domestic manufacture.*—The Committee not deeming any collection in this class sufficiently large to be entitled to a first class premium, award as follows:

A Special Diploma to Miss Adela Baylis, for two vases of wax flowers.

A Special Diploma to the Misses Bell, for a beautiful chair in worsted work.

A Special Diploma to Mrs. Brett, for choice specimens of worsted.

A Special Diploma to Mrs. John D. Stelwagon, for three pieces of exquisite worsted work.

A Special Diploma to Miss Anna Thurber, for a set of embroidery. Collar and sleeves very fine.

A Special Diploma to Mrs. William Bell, for three pieces of needle-work in worsted, very fine.

They desire to call particular attention to the three pieces of knitted work by Mrs. G. H. Bartholomew. A Bernouise and Tidy in crotchet worsted by Mrs. William Bell. Worsted work in frame by Miss Pollock. Knitted Sack and Tidy by Miss C. A. Baldwin. Piece of worsted work by Miss Lydia Flagg. Sofa Pillow in raised flowers by Miss W. W. Woodworth. Two crotchet Tidies in cotton by Miss Maria T. Cleveland. Three pieces worsted work by Miss Mary T. Bell. Afghan by Mrs. Thomas W. Ludlow. Embroidered Handkerchief by Miss Ida Cleveland. Muslin Quilt by Mrs. Betts. Worsted Embroidering in frame by Mrs. F. V. Hamlin.

There being no Committee on the fine arts to award premiums, the Board of Management have decided to award to A. Ceileur, Esq., a Special Diploma for a superb Photograph exhibited.

Also, a Special Diploma to William D. Carpenter, Esq., for a fine portrait of Gov. Chase.

They deem worthy of particular notice a beautiful landscape by Mrs. William F. Groshon. A fine Crayon head by Miss Rebecca Copcutt. A painting and Crayon head by Mrs. L. Cobb. Articles of Sculpture in marble by Master J. W. Cable.

FRUIT-GROWERS' SOCIETY OF WESTERN NEW YORK.—The June session of this Society was held at Buffalo on the 27th and 28th. The President, Col. Hodge, being absent on account of illness, S. H. Ainsworth, Esq., took the chair. After the usual preliminary business, the following discussions took place, which we condense from the *Country Gentleman* and *Rural New Yorker*, but mainly from the former. The discussion on Grapes, however, was furnished us by a friend who was present, and who will please accept our thanks:

1. *Strawberries.*—What are the six best varieties of strawberry for family use, and the best six for market? and which is the best method of cultivation in each case?

Mr. Herendeen, of Wayne county, remarked that there was only one sort that he could really recommend, and that sort was "Wilson's Albany"—it would bear twice as much as any other sort, and four times as much as any common variety—can have them for eating in the family for two weeks, and it is a berry that wears well. It is acid, to be sure, but good, and the vine is

perfectly hardy; while the last berries of the season are as large as the first. Does not produce small berries if well cultivated.

For market cultivation, plant in rows four feet apart; cultivate between the rows till within two weeks of ripening, and then mulch with cut grass. In this way they will endure several years. Has crops of which this year is the fourth year, and they are full crops. The market men here in Buffalo were this morning selling Wilson's at three cents per quart higher than any other sort.

Mr. Coppock, of Erie Co., differed decidedly from friend Herendeen as to this sort. All strawberries have locations, and they change flavor, &c., when grown in various places. Here in Buffalo it does not keep up its full size, and the popular opinion is that it is not fit to eat. Wilson's Albany has a peculiar acid, and leaves a singular flavor on the palate after eating. Won't eat it at all. Likes Scott's Seedling and Genesee very much, but the climax is Burr's New Pine. With this there is no fault to be found. Longworth's Prolific is a capital berry, and Prince's Eclipse is earlier than Jenny Lind; but a seedling called "Coppock's No. 1" is the only sort I now cultivate in any quantity, and of that have fully five acres in bearing.

Mr. Moody, of Niagara Co., has planted upon a soil called a chestnut loam—cultivates some fifty sorts, and Jenny Lind is a week earlier than Wilson's Albany. Next is Peabody's Seedling. Triomphe de Gand is a fair bearer, but must be kept in hills. Hooker is very superior for flavor, and is a fair bearer. Trollope's Victoria does very well, and well cultivated is fine. Monroe Scarlet is the sixth.

Mr. Vick, of Monroe Co., spoke of the adaptation of the different varieties to different soils and climates; but so far as productiveness was concerned, Wilson's Albany must be universally conceded to have taken the lead. Scott's Seedling, Monroe Scarlet, Triomphe de Gand, Crimson Cone, which two years ago in the city of New York was cheaper than any other va-variety, but market gardeners' for New York are getting now into Wilson's Albany. For a private garden, would cultivate in hills a foot apart, and hoe up each plant separately. Renew the hills once in three years.

Mr. Hoag, of Niagara county, cultivates upon a sandy loam with no manure. Plants in rows three and one-half feet apart, but does not like the single hill system. Wilson's Albany most productive, and after the Hooker and Chilian. Chilian has been with him more hardy than Wilson's Albany. Spring is a better time than fall to set out plants.

Mr. Glen, of Monroe county, planted Crimson Cone upon a space of sixteen square rods. (one tenth of an acre,) and the second year picked eleven hundred quarts of berries. They had continued bearing well, and now this fifth year, had already yielded over one thousand quarts. Wilson's Albany is an enormous bearer the first year, but afterwards diminishes very much in productiveness. The Large Early Scarlet will bear as many quarts as Wilson's Albany, and comes first into market, when the price is high, the demand great, and the sales easy, while Wilson's ripens mainly in the glut of the market. Triomphe de Gand is very pruductive and very fine. Hooker is perhaps somewhat tender in open winters or exposed situations, but it is of unsurpassed high flavor. Scott's Seedling is very productive, but of insipid flavor. Crimson Cone is very fine and good for preserving. When planted in hills mulching is necessary.

Mr. Chas. Downing remarked that Wilson's Albany was the most productive plant he ever saw, but the fruit was too sour by far. Jenny Lind is a fine early sort. Triomphe de Gand was his favorite. Scott's Seedling was very handsome, but possessed no flavor. Of all crops, perhaps the strawberry was the most variable known, some sorts being admirably adapted to some localities and some to others. Trollope's Victoria was of fine flavor, but not very productive. Monroe Scarlet was not as good on the banks of the Hudson as farther west, while Hooker was a berry of superior flavor, but not productive enough to satisfy the demands of many.

Mr. Beadle, of St. Catherine's, remarked that in Canada, upon a soil decidedly sandy, there

was no variety for table use which was as early, of as good size and fine flavor as the Large Early Scarlet. Hovey's Seedling did well, having a few large berries on each truss, and ripening as it did next to the Early Scarlet, and being of a good flavor, formed a capital succession crop. Burr's New Pine is, however, the best strawberry we have ever seen in all its qualities, in productiveness and in flavor. In size we have only one rival for it, and that is Triomphe de Gand; we think a good deal of that, so far. Hooker bears large berries and a good crop of the finest flavor, with a few small berries on the truss. In Canada we are obliged to protect *all* our strawberries in the winter. We plant in the spring, rows 2½ feet apart, and plants 1½ feet apart in the rows; let the runners fill in the spaces during the first summer, and then stop runners—we mulch with grass, have two seasons of fruit, and then dig up.

2. *Cherries.*—What are the best six varieties of Cherry for family use, and also for market purposes? and the best method of cultivation?

Mr. Downing was called upon for his opinion, when he remarked that Coe's Transparent was an excellent Cherry for family use. Belle de Choisy was better, but a poor bearer. May Duke was one of the best for market. He would also recommend Great Bigarreau and Kirtland's Mary, and would speak well of Gov. Wood, but it is so liable to rot. Early Richmond is a very useful cherry. Early Prolific is a good early cherry, and a great bearer. Ripens with Belle d'Orleans.

Mr. Coppock of Erie Co.: Coe's Transparent for market are the most profitable; very good indeed. Black Tartarian, Yellow Spanish, Elton, Black Eagle, and May Duke.

Mr. Bissell, of Monroe Co., for earliest, wished Early Purple Guigne, and afterward Elton, Rockport Bigarreau, Coe's Transparent, Belle de Choisy, May Duke.

Mr. Hoag, of Niagara Co., named the old American Black Heart, which this year had borne ten bushels of fruit, selling readily at $3 per bushel; tree is always productive; fruit perfect, never wormy, jet black in color, and in texture soft and melting. Belle Magnifique is a fine late cherry for bottling—retains its shape and flavor admirably.

Mr. Jos. Frost, of Monroe Co., remarked that Coe's Transparent, at the Genesee Valley Horticultural Society, took the first premium for the best quart. Mr. F. thought that Belle de Choisy was one of our best desert cherries, and when the tree obtains age it bears well; but as for cultivation, Mr. Frost spoke very strongly in favor of trees on the Mahaleb stock. Dwarfed in this way they are far hardier than as standards, and are particularly desirable in the vicissitudes of our climate at the West. The tree is more bushy, and in form much preferable, while the fruit can be much easier gathered, and is actually much larger and finer than on standards. Besides this, the trees bear fruit earlier, and for small gardens the Duke and Morello varieties are particularly desirable on Mahaleb stock.

Mr. Downing spoke of Vail's August Duke as a variety highly thought of for a late sort, ripening about the last of July, and also said that on Mahaleb stock, cherries were better than as standards.

Mr. Townsend, of Niagara Co., would add that a soil of moderate fertility should in all cases be chosen to plant cherry-trees upon, and although the ground should be cultivated well, and all weeds kept away, it should not be too much stimulated by manures. On the Mahaleb stock the cherry-trees are not subject to so many vicissitudes as on standards. The wood is more dense and less subject to winter injuries, while the trees begin to bear at three years of age, and the size and quality of the fruit are very much improved.

3. *The Raspberry.*—"What are the best varieties of Raspberry for market, and which the best for family use, hardiness and productiveness considered?"

Mr. Downing preferred Brincklé's Orange for family use—is as hardy as any raspberry; Hudson River Red Antwerp for market—berry solid and carries well to market. All raspberry plants need to have the cane bent down and a little earth thrown on. Red Prolific is a red berry resembling the Black Cap in many respects, and far better in flavor. The Allen Raspberry has so many suckers that it is a real nuisance in a garden.

Mr. Joseph Frost concurred in what Mr. Downing had said about Brincklé's Orange, and in all his experience had found none so great a favorite.

Mr. Jas. Vick remarked, that letters from the West said that they considered Brincklé's Orange their only good bearer.

Mr. Fish repeated that unless Brincklé's Orange and Hudson River Antwerp are regularly protected in winter, they will die back; but for market the only good sort is the improved American Black Cap, commonly called the Doolittle Raspberry. This sort bears carrying better than any other variety known.

Mr. Hoag stated that five years ago he planted out a large assortment of varieties, but after cultivating them all with care and attention for three years, he removed all of them except Brincklé's Orange for family use. All of the sorts do, however, require some degree of protection. The American Yellow Cap has the same qualities as the Black Cap, and is improved very much in size and quality by cultivation.

Mr. Herendeen stated that his partner, J. J. Thomas, had tried the Allen faithfully, but does not like it.

Mr. Glen had tested the Allen Raspberry and exterminated it—had between two and three acres of Doolittle Raspberry—planted four feet by six, and they yielded more quarts of fruit to the acre than any strawberry—would bear shipping to any distance, and were very nice indeed—were larger and finer, and not so seedy as the common American Black Cap.

Mr. Moody liked them very much for market and for putting up in cans. Cultivated four canes to the hill, and trained the tall canes to posts and wires. New plants can be produced very freely by bending over the tips of yearling plants.

Mr. Downing called attention to Vice-President French—a week later than most of the Raspberries. A fine large berry; plant vigorous and productive.

4. *The Currant.*—Which is the best variety of currant, both for market and family use?

Mr. Moody thought most of the White Grape currant. It is much larger than any other sort except the Cherry currant, while it is not so acid as that sort is. The bush is very productive and vigorous in its growth, while the fruit hangs long on the bunches. Had eaten it fresh and in good flavor on the first of October. The fruit is twice the size of the White Dutch, and the bush will bear twice the quantity. There is a very marked difference between the foliage of the sorts; and then, again, the White Dutch fruit will all fall off when ripened, while the White Grape are all sound, the bunches of fruit compact and all doing well. This variety I put No. 1.

No. 2 is the Cherry, which is an enormous bearer and large, although quite acid, and needing considerable sugar to make it agreeable.

A cool soil is the best for currants, not wet, but moist. It should be well cultivated and in order, to keep the plant most free from weeds and grass. I think best of the tree shape. Trim out the lower branches and leave a bushy head. Plant the rows 4½ feet apart, and plants 2½ feet apart for fruiting, and manure highly.

Mr. Downing had seen bushes named White Grape and White Dutch, between which there was very little difference in color, or habit of growth, or size of fruit.

Mr. Sharpe, of Niagara county, had had an experience like that of Mr. Downing, and was perfectly surprised upon seeing the difference between the genuine White Grape and the White Dutch, as they stood side by side. The White Grape were double the size, and there was a very large difference in the quality of the fruit, while the habit of growth was distinct.

Mr. Downing spoke of the Versaillaise as fruiting in long bunches, so as to be easily gathered. The tree is the best and strongest grower that we have, and perfectly hardy, and is cultivated quite extensively about Boston.

5. *The Gooseberry.*—Which are the best varieties of gooseberry for family and market purposes, and the best manner of culture and pruning?

Mr. Frost spoke of some varieties which never mildewed. The Mountain Seedling was much better near Cincinnati than the Houghton, and a more upright grower.

Mr. Hoag thought Houghton's Seedling too small; thought the Mountain Seedling enormously productive, twice as large as the Houghton, and good for bottling. Foliage has a gloss as if it had been varnished.

Mr. Moody was accustomed to cultivate the English gooseberry on highly manured land, and suffered very little from mildew, but pruned very thoroughly.

6. *The Pear.*—What variety, if but one, and if more than one, which varieties of pear-trees, in an orchard of three acres on quince, and at what distances would you plant exclusively for market purposes, and what would be the best modes of culture?

Mr. Fish, of Monroe Co., would plant the Duchess d'Angoulême, for it is a good grower, bears early enough, and being a large showy fruit, always commands the highest price in market.

Mr. Peck, of Ontario Co., would, if confined to one sort, plant the Duchesse; but, on the same principle that the farmer cultivates more than one crop, would plant several sorts—Louise Bonne de Jersey, Vergouleuse, and if Vergouleuse blights double work it. Plant the trees ten by ten each way, and work between the rows with the horse cultivator, and hoe the trees as you would corn, without hilling much.

The mention of the blight here induced a discussion as to how bad it was and how it acted, &c., which we omit.

Mr. Vick: There is no evidence that high culture induces blight, and I think it is the most false idea to allow any farmer or any person to suppose that good cultivation brings on disease. Again, others speak of the dwarf tree as alone being subject to the disease, while the greatest and worst pear blight ever known in this country was forty-five years ago, when working upon the quince was unknown—when there was not a dwarf pear-tree in existence. If we desire to have fruit, and good fruit, we must labor for it, and as these various enemies arise up against it we must fight for it. We do not want to be like the inhabitants of tropical climates, where their bread-fruit and bananas, &c., all grow without any exertion on their part; they have nothing to do except pick and eat them. See what lazy curses it makes of the fellows! almost too indolent to eat! Articles, fruit, everything acquires value only as being the result, the product of labor. In Europe they work for their fruit. In England it is a constant battle to secure fine fruit. Why, my friends, there is one enemy to fruit in England (the wasp.) which is a worse foe to combat than all your annoyances put together. It sometimes compels the horticulturist to inclose his ripening fruit with gauze to prevent its access. To be sure corn will grow if put out as many of our trees and vines are planted, but even a hill of corn requires labor to make it a decent hill. Gentlemen, we are too gloomy and despondent by ten, yes, by a hundred times. We have meetings like this, and our remarks are reported, and these reports are copied into the English papers until in England they really believe that America is the hardest part of the world to live in. When they have a fresh pest there, which, like the woolly aphis, is particularly annoying, they call it the American blight.

Mr. Moody agreed with Mr. Vick, that as to pear blight we had not near the quantity now compared with forty years ago, when we considered the greatly increased number of trees: he remembered distinctly the blighting of standards in Cayuga county in his boyhood. This increased exemption from blight he thought was due to improved cultivation, for pear-trees used to be set out and then obliged to take care of themselves, and we now pay them attention equal to that required by a hill of corn. We keep the weeds down, and the ground loose. Can not have fine fruit without fair cultivation. For a single variety he preferred Louise Bonne de Jersey—next Duchesse—absolutely necessary to cultivate highly to get large pears, and these large pears are the kind that sell readily in market, and at high prices. Small, poor pears won't sell at all.

Mr. Townsend has his trees stand ten feet apart each way, but he thinks eight by twelve would be better. Louis Bonne is the best variety to make money out of, and next Duchesse, to be planted largely—some Vergouleuse, some Seckel—Bartlett double worked on White Doyenné, and Beurré Superfin. As to blight, has often found that just as his trees have arrived at the

bearing age, they have blighted—can not say that there is any liability in sorts—all varieties seem about equally to show this disposition to taken on pear blight.

Mr. Manly, of Erie Co., recommended, 1st, Rostiezer, which is a vigorous grower, and needs pinching in regularly. 2d, Louise Bonne, for its productiveness and market qualities generally. 3d, Duchesse, always bears well, so well that the fruit ought to be thinned, so as to allow the balance to become of the best size. 4th, Beurré d'Anjou bears large crops of very handsome fruit. Here in Buffalo, a quality for standing June frosts is desirable, and Louise possesses that. After the frost of June 8, 1859, the Louise dropped but little; Duchesse, although the fruit dropped considerably, retained enough to have a very handsome and desirable crop.

Mr. Beadle, of Canada, here spoke of the very dismal tone of each speaker as to blight, and the other difficulties in the way of cultivation, and wished now to hear the other side.

Mr. Townsend, in answer to questions, stated that in his quite good-sized orchard, the balance sheet was as a whole satisfactory—$400 to $500 per acre—would average $100 per year to the acre. In fact, he knew of no business more profitable at present than dwarf pear culture, and is actively engaged in it. Had heretofore advocated thorough tillage, and does so still. Nothing else will answer. Any land that will yield sixty bushels of corn to the acre will answer for dwarf pears.

Mr. Manly apologized for speaking of his misfortunes, but those were what we would like to prevent, and we came together to learn about these dismal things, and how to prevent them, wholly or in part. As to the "other side," had cultivated Louise Bonne, &c., for five years, upon eight acres of land, which has yielded him a net of $300 per acre, and cultivates it as well as corn.

Mr. Ainsworth desired, before the society separated, to show them the difference between the results of good and poor cultivation after eight years' planting. They were standard pear-trees of different sorts transferred from the nursery at the same time. One lot, which was planted in sward ground, are mostly dead; but one Bartlett of about average size, measured just the length of this string in circumference, (4⅝ inches,) and had two pears on. It has had from one to three pears on for several years. The Tyson "stands grief" best, and a tree of Tyson was nearly double the size of the Bartlett, but had no more pears on. Another lot was planted in good corn ground, and has had the weeds cultivated down all the time—are nearly all living, and not a tree of this lot but will measure fifteen inches in circumference, while this (2 feet 9¼ inches) is the circumference of a Bartlett tree which has this year about three bushels of fine healthy pears upon it, and from which we last year gathered more than a bushel.

Of course no further comments were necessary as to the different results of poor and of good cultivation.

7. *The Grape.*—What is the best method of cultivating the out-of-door grape?

Upon this question a very interesting discussion sprang up, and we only regret our inability to give the remarks of many of the speakers verbatim.

Mr. Peck, of Bloomfield, has thus far cultivated mostly the Isabella, although he is commencing to test some of the newer varieties, especially Delaware and Diana. Plants in rows ten feet apart each way, and trains to a trellis six feet high, of four wires, supported on cedar posts forty-eight feet apart, and set three feet into the ground, the lowest wire one foot from ground. In 1859 the product of three-eighths of an acre was 4,000 pounds, sold for cash, $500. To show the importance of having grapes well cultivated, well ripened, and well packed, Mr. Peck said his first quality grapes sold readily at fourteen cents per pound, while the second quality only brought five cents per pound. After setting the vine out, allows it to make one strong shoot the first year, which in the next spring is cut off a foot from the ground. Let two shoots start from this, and make laterals upon the lowest wire of the trellis: one running each way until it meets the lateral of the next vine. From the laterals train the uprights upon the trellis, and with proper attention the whole of the wires will be covered. Spoke of winter protection: laid part of his vines down last winter, and part he allowed to remain on the trellis; but can

not this season see any difference in the vines. Some are more injured than others. In making the trellis, used new telegraph wire, No. 9, in lengths of thirty rods each, fastened at one end into a well-braced post, and at the other cut with a thread, so that, with a nut, he can loosen each winter and tighten again each spring. Finds the wire to contract about one foot in the thirty rods between the coldest and warmest weather.

Mr. Moody, of Newfane, liked the trellis training very well, but much preferred the single stake system, for several reasons: 1st, You get fine grapes on young wood, i. e., canes one year old. 2d, You can take better care of the vines through each winter. 3d, You can put your vines nearer together. Rows eight feet apart and plants five feet apart in the rows are the distances he prefers. In training to the single stake, practises what is called the bow system. First year let the plant grow all to one cane. The second year cut back the one cane, and allow two to grow right up to a stake some six feet high. Take out all the laterals, so as to force the growth into these two canes. Next spring cut away the weaker of these two, and train the other upon the bow system, and fruit it. Practises deep cultivation, and keeps it up; never drives his cultivator less than six inches from surface, and deeper as goes further from plants; liked very much the system called the double subsoiling, as a preparation for the vineyard. Did not like the practice of mulching his vines. Under this mode of training, the single bows will average sixteen pounds to the vine of grapes, worth fifteen cents per pound. This would be about $2 40 per vine; and as the acre planted five feet by eight would contain about 1,100 vines, we could afford to receive half that sum per vine and yet make more money than by training upon the trellis system as mentioned by Mr. Peck.

Mr. Moody was thinking very highly indeed of the Delaware and Diana vines, because, 1st, they always ripen their crops, and the Isabella fails about one year in five; and 2d, when ripe, the Isabella always requires some sugar for the manufacture of wine; while the Diana and Delaware have saccharine matter sufficient to dispense with "rock candy" or "loaf sugar."

Mr. Herendeen, of Wayne, spoke also in confirmation of Mr. Moody as to Diana and Delaware grapes; mentioned also a fruit-grower named Bradley, who by careful attention to his picking and packing his crop of Isabella fruit, sold his grapes last season at twenty cents per pound. They were nicely packed in pasteboard boxes with five pounds to the box, so as to reach market in fine order. Other parties who wished to realize such prices sent their fruit in bulk, and not so well packed, and their returns only averaged five cents per pound.

Mr. Ainsworth, of Bloomfield, trains his vines upon trellises; but thinks that all the protection which they need in winter is to loosen them each autumn from the trellis, and allow the vine to lie flat upon the ground. Does not think it needful to throw earth upon them. Puts his vines twelve feet apart in the rows, but the rows ten feet apart, same as Mr. Peck's.

Mr. Bissell, of Rochester, could endorse all that had been said in commendation of either the Diana or the Delaware. Both varieties are largely endued with saccharine matter, and need no supplies of sugar when the juice is expressed for wine. Again, in our northern latitude, we must have varieties which, while they produce largely and freely, are also certain to bring their crops to maturity every season. In our climate we can rarely ripen the Catawba, and the Isabella so frequently fails that we have been anxiously searching for the vine to take the place of both; now in the Delaware and Diana we think we have found them. As a black grape, Concord is rapidly becoming a deserved favorite.

Mr. B. advocates the "renewal system," and would prefer the trellis training, although the stakes will do very well. Post and wires cost more at first than stakes, and are more labor to put up than the stakes; but, although in the beginning you can get more fruit to the acre from stake training, you can, when the vine is fully in bearing, get more fruit from the trellis training; and for table use the trellis fruit is finer and better fruit. For wine manufacture we can probably get a greater weight of grapes per acre from stake training, but the bunches are not likely to be so large nor so fine looking.

PROGRESSIVE GARDENERS' SOCIETY.—The following is a continuation of the proceedings of this Society from our last number. It begins with the last part of Prof. Stephens's essay on *Manures*.

In considering the application of manure to the soil, it is an important fact, not to be lost sight of, that neither stable manure nor animal matter in their fresh state are fitted to give up their fertilizing elements as food for plants. Strictly speaking, the food of plants consists entirely of inorganic matter. Stable manure in its fresh state consists chiefly of undecomposed litter and straw, and of partly decomposed vegetable matter contained in the solid excrements. After a thorough fermentation, which is a kind of slow combustion, a dark, rotten, powdery mass remains, the organized substances have been decomposed, a large part of the water has been expelled, and if the manure heap has been properly managed we have the fertilizing elements in a more concentrated and soluble form than before, and ready at once to enter into the office of vegetable nutrition.

Some valuable experiments by Voelken on the composition of fresh stable manure 14 days old, on which no rain had fallen, and on the same manure well rotted for six months, gave the following results. He found that during the fermentation of dung the quantity of both soluble organic and soluble mineral matters rapidly increases, and that the proportion of ammonia and of phosphate of lime in these soluble matters also rapidly augments. Thus 100 parts of dry soluble organic matter from rotten dung contained 6.04 of nitrogen, while 100 from rotten dung contained 8.02, and the phosphate of lime was nearly doubled. The proportion of organic matter decreased as the fermentation went on, but the loss was in carbonic acid and other non-essential gases.

There is apparently no serious loss of ammonia by evaporation, as is commonly supposed. Direct experiments have shown that in the cold no ammonia is given off from the surface of farm-yard manure, and that a considerable amount of heat is necessary for this purpose. Now as this occurs only in the interior of the heap where the fermentation is active, the liberated ammonia, in passing through the outer layers of decaying organic matter at a lower temperature, is arrested. This fact was proved by Voelken by the analysis of fresh manure made into a heap, and left for six months. The amount of organic matter was found to have diminished from 960 lbs., but the total amount of nitrogen at the commencement was 18.23 lbs., and at the end of six months 18.14lbs, or nearly the same. To guard against the danger of loss in fermenting manure it is only necessary that the heap be protected from rain, and if the fermentation becomes so active as to produce much heat, let the heap be covered with turf or sod, kept moist by occasional watering, or sprinkle the heap occasionally with sulphuric acid and water, which does quite as well as the covering of turf.

I do not mean to say that it is not better sometimes to apply the long manure directly to the soil. If this is done, the fermentation and decay must take place in the soil before the plants can avail themselves of the nourishment. The advantage gained is that the manure has more tendency to lighten and render the soil porous, and also to contribute some warmth to the soil during fermentation. While short dung is certainly preferable for spring crops, long dung may be better for winter grain. At all events, it is better to bury the fresh manure at once in the ground than to leave it subject to the drenchings of either winter or summer rains, as is the practice of some improvident farmers. The above facts showing the advantage of fermented over fresh manure apply equally to animal matter.

In estimating the value of artificial manures in which animal matter forms the chief ingredient, it is of the utmost importance to know whether the animal matter has been simply dried up, or whether it has been decomposed by fermentation in the process of manufacture; for on this will depend the activity and also the concentratedness of the manure. In the thorough and judicious fermentation of animal matter, not only in the water already existing in the mass expelled, but the weight of the manure is further greatly reduced by the combination of the elements of water and of carbonic acid and their subsequent expulsion, while all the mineral elements and the am-

monia are retained. The manure is therefore much more concentrated than it could be made by merely drying the crude material. It is also rendered more active, for the nitrogen has been brought into the form of ammonia, in which state alone it is suited to be food for plants. The phosphate of lime, also, usually considered an insoluble compound, has, in the process of decay, become soluble. Woehler, the great German chemist, has observed that bone dust moistened with water, yields, after a time, a considerable quantity of soluble phosphate of lime, and that this solubility rapidly increases with the putrefaction of the gelatine of the bones. Hence, whenever earthy phosphates exist with organic matter, water will invariably dissolve a portion progressively with the decomposition of the organic matter by fermentation. This fact is of the utmost importance to agriculture.

Guano is the best example that can be adduced of a manure that has undergone the beneficial influence of complete decay, and it is to this fact that its activity as a stimulant to vegetation is to be chiefly attributed. It contains, however, in too large proportion the elements for producing seeds and nutritious roots, compared with the mineral elements for strengthening the stems and leaves of plants, to be taken as a complete fertilizer. To a soil sufficiently supplied with potash and soluble silicates, guano may be advantageously applied. On soils deficient in these substances, or scantily supplied with lime, its continued application will produce exhaustion.

The use of special manures is always more or less a hazardous expenditure, unless the agriculturist is accurately acquainted with the composition and wants of his soil. The use of phosphate of lime on a soil which happened to be not deficient in that particular substance, would prove an expenditure yielding at least no immediate return; it would not increase the crop. And even if the soil did lack phosphates, if at the same time it was also deficient in potash, or any other essential mineral ingredient, then the addition of phosphates alone would fail to produce fertility. If a soil merely lacks some particular ingredient, of course the addition of that ingredient will produce fertility. It is easy to see, then, the cause of the contradictory experience of agriculturists as to the value of salt, and of gypsum and lime as special applications. It would be folly to apply lime to a calcareous soil, or salt to lands moistened by the spray of the ocean. I will not speak of the advantages of these applications at present, though if time permits I would like to remark upon them at a later stage of this discussion.

I will merely add now a few words concerning one supposed disadvantage attending the use of artificial fertilizers. It is thought very generally by farmers, that concentrated manures can never take the place of bulky stable manure, on account of the deficiency of the former in humus-forming elements. Now, while I am decidedly of opinion that, as far as the agriculturist can obtain an abundance of stable manure at not too great a distance, he can not do better than to make that his main reliance, depending on artificial manures only as occasional aids to bring on an early crop, or to help on a slow one; still, in the lack of stable manure I have no doubt that artificial manures may be made to take its place fully and successfully. I attach but little importance to the organic matter of straw or litter aside from the mineral ingredients which it contains, and its mechanical effect in loosening a soil. The organic matter itself decomposes simply into water and carbonic acid, elements which nature supplies freely in other ways. It is chiefly the inorganic matter, the potash, soda, lime, and magnesia contained in the decaying vegetable matter, which give it its manurial value. These minerals can be easily applied in artificial manures; and then, as regards the mechanical advantage of bulky manures in lightening a soil, this same advantage can be more effectually obtained by a judicious rotation, by which a sufficient amount of sod and roots will be from time to time buried in the soil.

(To be continued.)



ROSE CHAMPION.

for THE HORTICULTURIST,
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Room Plants.

THE present is an appropriate time to say a few words about growing plants in rooms. There are many persons without the convenience of a greenhouse, but in whom the love of plants is so strong that they will not be without them during the winter, even though they have to grow them in a garret window; and it is a happy circumstance that they can do so. We never pass a window in winter, with its few Scarlet Geraniums, and perhaps a pot of Mignonnette, etc., without thinking that there dwells within that house a soul full of the aspirations of a better life; and we can well imagine how many lonely moments have been lightened by the presence of these silent yet cheerful companions: the light and sunshine so essential to their own well-being they impart freely to those who care for them. There is a striking resemblance, in many respects, between woman and flowers, more especially in the modesty, loveliness, and sweetness which we are all willing to concede to both; and we should naturally expect to find, and do find as a general thing, that women have a nicer and more refined appreciation of flowers, than men. Her organization, more delicate than that of man, intellectually and physically, fits her better to discriminate the finer shades of beauty. It should, therefore, excite no surprise to find among women the most constant lovers of flowers. Probably two thirds of the flowers found in rooms are grown by women, and the number might be greatly increased with a corresponding diminution of that unnatural craving for excitement now quite too common. We know of nothing better calculated to beget home attachments than the love and culture of flowers.

We should be glad to do or say something to increase the number of those who grow room plants. It is true that plants can not be as well grown in rooms as in a well-constructed greenhouse; but, notwithstanding, there are some kinds that may be grown and flowered in a manner quite satisfactory, and with results highly gratifying. Certain conditions are necessary for the best success, and these it is our object to point out. The greatest obstacle to success is the dryness of the air: this may in a measure be overcome by a table suitably constructed, and the selection of plants best adapted to a dry atmosphere. The table should be the length of the window, and two or three feet wide, the boards being tongued and grooved. Around the edge nail a strip three inches wide, making the corners fit tight. The table is then to be filled with two inches of clean white sand. With a table of this kind, the foliage of the plants can be frequently syringed or sprinkled with water, which keeps them clean and promotes their health; the drippings and surplus water are caught and absorbed by the sand, and the floor of the room is thus kept clean; the sand, indeed, ought to be kept constantly wet, and even watered for this purpose, if necessary. The evaporation from the sand will diffuse itself among the plants and through the room, and thus overcome, in a small degree, one of the chief obstacles to the successful culture of plants in rooms. The table should be fitted with rollers, to facilitate the operation

of watering and cleaning the plants, and also for the purpose of moving it back from the window during very cold nights. The flower-stands in common use are altogether unfit for a room ; the surplus water, dead leaves, etc., fall to the floor, injuring the carpet, and giving the room an untidy appearance. The table above described is free from these objections, besides having positive advantages for the successful growth of plants which no ordinary flower-stand can possess.

All rooms do not possess equal advantages for growing plants. A room with large, high windows, looking to the south, is the best ; the next best is one with a southeast or southwest exposure ; next, east ; next, west ; and the least desirable of all, one looking to any point north. A large bay window with a southern exposure possesses many advantages for growing plants, quite equal in many cases, and superior in some, to those structures absurdly called "plant cabinets," unless the latter be intended for the preservation of dried specimens, the only purpose for which most of them are fit. A basement window with a southern exposure will sometimes answer tolerably well, but a room in the upper part of the house is always to be preferred. Having secured a table and selected a room, the next thing in order will be a collection of plants ; and here we would drop a caution against accumulating too large a number. Plants can not be well grown any where, or under any circumstances, when crowded together; it is always more satisfactory to grow a few well than to grow many indifferently. In making a list, we name only those which we know to succeed well in rooms, and which are least impatient of neglect and changes in temperature. From our list of annuals given last month may be selected *Schizanthus*, *Lobelia*, *Alyssum*, *Mignonnette*, *Mathiola*, and *Ageratum*. Of perennials a good selection may be made from the following, taking them somewhat in the order in which they are named : Geranium, (scarlet and sweet-scented,) Primula sinensis, Azalea, Epiphyllums, (indeed, the whole Cacti family,) Spiræa Reevesiana and prunifolia, Roses, (such as Hermosa, Agrippina, Fragoeletta, &c.,) Heliotrope, Laurustinus, Bulbs, (such as Hyacinths, Narcissus, Crocus, Ixias, Babianas, &c.,) Calla, Oranges, Lemons, Deutzia gracilis, Weigela rosea, Coronilla, Petunias, Cypripedium insignis, Hoya, (or Wax-plant,) Verbenas, Stevia, Daphne, Carnations, Cape Jasmine, Pittosporum, Salvias, Passiflora, Bouvardia, Fuchsia. We do not recommend the young amateur to make so large a selection, unless several windows are fitted for the purpose of plant-growing, or unless the selection is confined mostly to one plant of a kind. A good selection for a beginner would be a few pots of Alyssum, Mignonnette, Lobelia, Geranium, Primula, Azalea, Calla, Cacti, Coronilla, Heliotrope, Spiræa, Orange, Lemon, Petunia, and some bulbs. It is better to begin in a small way with a few kinds easily grown, and to increase the number and variety as experience and skill are acquired.

We can not, of course, within the limits of a single article, give directions for the cultivation of the plants we have named ; we can only add a few brief remarks on their general treatment. One of the most important things to be attended to is watering ; the plants should not be allowed to wilt for want of water, but they should not be watered till the surface of the pot becomes dry, and then enough should be given to go entirely through the ball of earth. The plants should be frequently syringed or sprinkled overhead, and kept clean, and free from dead leaves. Extreme changes of temperature should be avoided as much as possible ; a moderately low temperature is to

be preferred in a room to a high one ; since, in the absence of a strong and diffused light, too much warmth will cause the plants to grow weak. If the windows have curtains, they should be kept up or drawn aside, and all the sun and light possible admitted to the plants at all times during the day. When the weather is mild, the window may be thrown up for a while, or the top sash lowered a little. During very cold nights the table may be moved to the middle of the room ; and if the plants should unfortunately get frozen, darken the room and throw *cold* water over them repeatedly till the frost is drawn out, and then expose them gradually to the light. In this way we have saved plants when the ball of earth has been frozen as hard as a brick. Room plants should not be brought into the house till the nights get frosty, and while out of doors they should have a sunny exposure. Insects should be looked after, and destroyed on their first appearance ; a little attention in this way will keep them free from such pests.

It has been objected by some that it is unhealthy to keep plants in rooms ; but their arguments lack coherence and force, and we are compelled to record our experience against the position. We believe them, on the contrary, to be conducive to health, not only by their soothing and cheerful influence on the mind, but as purifiers of the air, so that all may indulge their tastes without the least apprehension of injury to their health. We have no room for an argument here, but we believe that every vegetable physiologist will sustain our position ; if he will not, then, in our opinion, he has something to learn. We commend room-plants to all who have a room in which to grow them, and especially to the ladies, who are necessarily much confined to the house : they will cheer many a lonely hour, and afford balm to many a wounded heart. The world can not seem utterly a blank while the love of flowers is left to console us.

EXPERIENCE *versus* THEORY.

BY FOX MEADOW.

When our attention is attracted to the pages of the Horticulturist, it is either from a love of knowing how the beautiful things in Nature burst spontaneously into existence, or fostered forward by the scientific hand of man, or the construction and execution of his mechanical powers. In either case it is pleasing and interesting. But it very often occurs that we turn to those pages for something that materially affects our own individual interests. Perhaps the cultivation of some very delicate and choice fruit ; the formation of a vine border on or over a peculiar subsoil ; the mode of pruning or training requisite to insure fruit from certain species of trees, or the best design for some horticultural building. Whatever the subject may be that directly affects our personal interest, we anxiously and gladly receive it, depending solely upon the efficiency, practical working, utility, adaptability for an intended purpose, as set forth by the author, whoever he may be, taking it for granted that the subject he introduces to the public is his own individual experience, *the result of practice worked out of time.* This is what we mean by "Experience," and what all who talk about experience should mean.

For instance, take a man who has been working all his life in a culinary garden, (and we will allow him to have a good deal of natural ingenuity ;) ask him to design for you a mansion, adequate to the requirements of your large family, and tell him the house must combine elegance in the architectural design, convenience, ample room, and for a certain specified sum of money it must be built. We do not deny the impossibility of his giving you a very pretty plan ; but suppose we put this pretty plan in the hands of one of our every day designing architects, would he not at once say within himself, This has been got up by a novice ? This man can design, but he has had no experience in this matter ; has never been accustomed to *live* in a house of this description, or he certainly never would have made so many gross mistakes.

In the April number of the HORTICULTURIST, page 170, we have a perfect *fac simile* of the above. Here we have a " Design for a range of Grape-Houses," by Mr. John B. Eaton, Buffalo. With all due respect to that gentleman, we feel it our bounden duty to point out to the readers of the HORTICULTURIST what we consider to be, in our humble opinion, grave mistakes.

The plan is shown in the HORTICULTURIST, combining a range of four houses twenty feet wide, with the total length of the four measuring one hundred and eighty feet. Mr. Eaton's motive in designing this range with four wings combined, we have no particular objection to ; still to *commercial growers*, who, from necessity, ought to obtain the very perfection of fruit, I should by no means recommend it ; for we invariably find in all houses erected on the curvilinear principle, that the vines and fruit are better on one side of the house than on the other ; and this is owing to the direct action of light or the sun's rays. You will also find that where curvilinear houses run east and west, the vines will start into growth on the south side long before those on the north, for the simple reason that the border on the north is often frozen up when the south border is warm and vegetating. Again, the foliage of the vines on the south side of the house so much shades those on the opposite side, that it is scarcely ever the wood of the latter gets properly ripened ; indeed, I may safely say, never. The cardinal error, however, is in the arrangement of the crops, or rather forcing the crops. Here we have the house marked *A* with the greatest number of feet of pipe in, and designed as the *first* forcing-house, placed completely *north*, where it is subject to all the cold, perishing winds, without any protection whatever, and even the boiler and entrance to it with the same objections. I should have thought that a man having any experience on this subject—that had ever forced grapes, *even one year*, in such a design as this—would have had the house marked *B* the first forcing-house, and *A* the retarding-house. Certainly you could retard your vines better in a house where the glass faces east and west, than in that of *D*, where it faces the south. Another point is gained if *B* is made the first early, which is a considerable item in forcing ; that is, the screen or protection the other three houses provide. It will make a considerable difference in a heap of coals whether the forcing-house stands at the north or the south in this design. It strikes me very forcibly, that in trying to force the house marked *A*, the winds from the north would blow out all the heat you could make from that flow and return pipe, just a *little* faster than you could make it under the boiler.

Glass all round the house, Mr. Eaton, makes a very poor forcing-house. In our simple opinion, there is nothing that will beat the *old lean-to ;* and

if you think it is requisite, or they can not be built only in short lengths, and each to have a separate fire, you will find that at least around NewYork it is not so ; for we have houses three hundred feet long, with six rows of pipe, which are heated with *one boiler*. It is a very poor boiler (so considered now in New York) that will not thoroughly heat the water in a thousand feet of pipe. One that will heat four or five hundred feet can be picked up almost any where, and bought as old iron. I honestly believe there are no better boilers in the world than are manufactured in New York. And yet, our country cousins in Philadelphia could scarcely muster a dozen common boilers in their whole city, if we were to go and hunt them up to-day. I suppose the reason is, they don't see the HORTICULTURIST.

Mr. Eaton, speaking in reference to the propriety of placing span-roofed houses at *C* and *D* in his plan, says, "It may be thought by some greatly out of rule, but I am satisfied that their many advantages more than counterbalance the partial deprivation of sun which the vines on the northerly sides would experience, and which would be somewhat greater than in a lean-to house of less width." We would much like to know what these *many advantages are* to the *commercial man*, for whom this design is intended.

Mr. Eaton goes on to say, "If it be desirable that the time of ripening should be nearly equalized through the whole house, it is not difficult to select earlier sorts for the northerly sides, which will naturally be retarded until their maturity nearly corresponds with those in front ; but I do not consider it a disadvantage to have the season of each sort prolonged by the different exposures, and think it quite feasible, by a judicious selection of varieties, to cause the north and south sides of those two houses to furnish as regular a succession of each sort, as if they were grown in distinct apartments." This is strange advice to give a man who is going to grow grapes for market ; and if I were to act upon such advice, after waiting for three or four years for my crop of grapes, *the test of this experiment would unquestionably be my ruin.* Now, to settle the whole question on this point at once, there are only two varieties of grapes that are worth the *commercial man's attention!* I say it emphatically, *there are only two kinds of grapes that will pay him to take to market*, and these must be in *number one condition.* The two varieties I have reference to are Hamburghs and Muscats. All the early varieties Mr. Eaton has reference to, such as all the Chasselas and Frontignan class, with the whole host of other names, for a *commercial man* to plant, would be almost as bad as taking money out of his pocket and throwing it into Lake Erie, at Buffalo. At a time this spring when Hamburghs were selling in New York, Boston, and Philadelphia for a dollar and fifty cents per pound *wholesale*, the Chasselas varieties sold for about *sixty cents!* The man who intends to get his living by growing and selling grapes, must realize a given number of pounds' weight from every vine, and each pound must bring him a certain price in order to pay expenses and realize an interest on his capital invested. One half the stories told about grape-growing, and grape *paying*, are nothing more than *fairy tales*, fit only to be told by those who have no respect for truth.

For a private gentleman's establishment, who may be pleased with a toy, and may require a number of varieties, in order to tell his friends how many sorts he grows, and who is better able to pay for experimenting, whims, and hobbies than the man who is necessitated to make a living of it, we have no particular objection to this "*cross-stick*" plan of John B. Eaton, Esq.

[Fox Meadow is a veteran grape-grower, and whatever he says on this subject will have its weight. His objections to Mr. Eaton's plan of forcing (at least so far as the latter may be intended for commercial men) would seem to be well taken. Mr. Eaton, however, may have something to say in defence of his plan. Where grapes are to be grown for profit, *economy* must be studied at all points ; and this should be borne in mind in discussing the subject. It is now attracting so much attention, that a good deal more may be said profitably.—Ed.]

WHAT AND WHERE, FOR EIGHT MONTHS IN THE YEAR, IS THE PLUM CURCULIO?

BY TERAGRAM, NEW HARMONY, IND.

I suppose you were present at the meeting of the American Institute Farmer's Club, New York, July 16, when Mr. Solon Robinson severely castigated an inquirer at Dobbs's Ferry, for ignorance regarding the curculio. I think the inquirer excusable ; for I read statements made to the club, without contradiction, that seem to display quite as much ignorance. Very many statements put forth by practical men in the club, and elsewhere, are calculated to create the perplexity experienced by the inquirer at Dobbs's Ferry.

Not long since the discussion in the Farmer's Club, as to "where the curculio goes when it is not in the plum," made me wonder if any of the members ever read an entomological book. Many practical men have told us to tie cloths around the trunks of our trees, to prevent the attacks of the curculio : some have said, "tie three cloths, and you will find the curculios in the lowest cloth ; you may find some in the second, but you will not find any in the top cloth." Is not this calculated to make people believe that the creature merely *crawls*, and can not get over the top barrier? I know that this curculio, like many other insects, hides from the light of day, and that a cloth close by saves it the trouble of hiding in the earth or in crevices. I place cloths in the crotches of my trees, look into them every morning, and I catch not only many curculios, but many other enemies also.

As the "pea-bug" is a curculio, (differing a little in size, shape, and color from the plum curculio,) and its history is open to every one's examination, it may best explain, by comparison, what the plum curculio is, and what it is doing when not in our plums. I suppose that all interested know the "pea-bug ;" well, the females of these small insects lay their eggs in the pea blossoms, so that the grubs hatched from these eggs are in the peas ; there they feed until they have grown their full size, which is at about the time when the peas are ripe. Open a pea then, and you will find a grub ; open another pea, of the same crop, a little later, and you will find, not a grub, but a soft, pulpy, light-colored insect, of quite a different form, "a bug" in shape, though probably deficient of wings and wing-cases ; it has then done feeding. Open another pea, of the same crop, at a still later period, and you will find the perfect "pea-bug," dark-colored, with horny wing-cases, and, underneath these, the wings with which it flies. Just such a change is undergone by the plum curculio.

A large variety of insects, when they have done feeding, which is when

they have attained their full *grub* size, go into the earth, or remain in the earth, (if that be their feeding place;) there they abide in a state of apparent torpor, while the change which converts them to the perfect insect goes on. They will remain in that state for many months.

We find that the "pea-bug," though it has done feeding in June, remains in the pea until March or April. Some precocious bugs escape before we pack up our peas, but this is not the rule.

The plum curculio lays its eggs in the young fruit; they produce grubs, which feed until fully grown, at about which time the plum drops to the ground, or the grub drops; the grub enters the earth, and there goes through its necessitated changes, and, as a general rule, remains in the earth until the next spring, when plums and cherries are ready to receive its fatal mark. The creature is kept in the earth, first, by the time required to perfect its form and strength, and next, by uncongenial weather.

Of some kinds of insects there are several generations in the year; there may be sometimes an exceptional second brood of the pea and plum curculios; but I believe that such, even if they deposit eggs, will not have descendants to inherit their ill fame.

I find a conjecture in a "Patent Office Report," that the pea curculio may, when it can not escape from where the peas are confined, in sacks, &c., return to its pea to feed; but the pea is not the food of the perfect insect; it, like a large number of its near relations, and like, perhaps, the greater number of insects of other orders, remains without feeding for the longest portion of its existence. When peas are left on the ground, it is reasonable to believe that the mature curculio, finding too few things congenial to it above ground at that season, retires to the earth, until blossoms and pairing time give it food and occupation.

[We are obliged to "Teragram" for her clear and common sense remarks on the curculio. We were present on the occasion alluded to, and thought the rebuke quite too severe. Why should we deal so hardly with the seeker for truth, and pass over in silence equally culpable ignorance in professedly scientific men? We would at all times rather say a word of encouragement than dampen enthusiasm by too harsh a censure. It seems that the individual alluded to was only just entering upon the pursuit of fruit-growing, and his inquiries should not have caused more surprise than the assertion recently made by a learned entomologist, who has made the curculio a special study, that "but one slit is made upon a fruit;" for it is no uncommon thing to see two or more. One thing is certain—the curculio is a winged insect; hence tying "cloths" and "tin pans" around the body of the tree will do no more good than attaching them to any other part of the tree. In all such cases they are useful to the extent and in the way described by Teragram, and in no other. There have been many different modes proposed for destroying the curculio, and these have been applied with more or less success; but we can entertain little hope of the extirpation of the curculio evil until remedies shall be persistently applied as *preventives* and not as *cures*. In regard to the "pea-bug," the number is increasing every year. We have observed the changes noted by Teragram, and have been the innocent means of destroying the "taste" of some of our friends for peas; they will not eat them, except the first pickings of an early crop, on account of the "grub." From what we have seen of the curculio, we are led to believe, that on dropping it seeks refuge in the ground, where it under-

goes its changes, and in a few weeks comes forth a perfect insect; during the winter it remains torpid, seeking shelter wherever it can find it. Professor Fitch, we understand, claims to have lately discovered an ichneumon which destroys the curculio. We hope this is true, but can not understand how an *ichneumon* can accomplish so desirable a consummation in the case of the curculio. We have the curculio at this moment in all the stages of its transformation, from the pupa to the winged insect, all alive. We shall continue our investigations with the hope of being able, hereafter, to throw some new light on the subject. Since the above was written, we have had a call from Dr. Timble, who has also been very attentive to the "little Turk," with results similar to our own. He has promised us an account of his investigations when completed, which will prove to be very interesting.—Ed.]

WINE AND TEMPERANCE.

BY X.

I am glad to observe that this subject is likely to receive some consideration from horticulturists. All I ask is, that the truth may be met, and duly weighed. So far, we have had nearly every thing on one side. The use of wine, as a remedy for intemperance, has been recommended by many prominent cultivators and most of the agricultural and horticultural papers, while scarcely one has uttered a sentence by way of objection. At one of the sessions of the American Pomological Society, a member delivered a stirring eulogy on the manufacture of American wine, with a strong recommendation of its general use, to which the worthy President responded with an emphatic "Amen!" and several other remarks were made of a similar tendency, no one objecting to the course of the discussion; but as soon as adverse remarks were made, members sprung to their feet, with the exclamation, "We must not allow this discussion, it is out of place here!" and it was immediately stopped. Perhaps the only mistake was in beginning it. All that is asked for at present is fair play. The eulogists for wine-drinking have had it very much their own way; possibly because those with different views have not voluntarily spoken. If so, some of us will endeavor to make amends.

I differ a little from the author of the communication in the last number of the Horticulturist. He quotes from the Sacred Scriptures—alludes to the injunction of Paul to Timothy, to "use a little wine for thy stomach's sake, and thine often infirmities." Now we must be candid and fair, and look at the circumstances. Timothy was ill, but still he used only "water"—would not drink even a "little" wine, and that for medicine, until it was urged upon him by an inspired apostle. If none of us go further than this, we shall never consume it very largely. Why are the results of wine sometimes denounced in Scripture, as "woe, sorrow, babblings, wounds without cause, and redness of eyes," and we are cautioned not even to "*look upon it* when it is red, when it moveth itself aright," (ferments or sparkles,) and in other places it is commended? Doubtless there was more than one kind, the alcoholic and the non-alcoholic. It is so at the East at the present day, as I am informed. But whether so or not, one thing is certain, that the evils of intemperance have been so greatly increased by means of distillation, that wine, that so often leads the way and prepares the appetite for stronger spirits, is far more dangerous now than at an early period of the world's history.

I did not intend to have said much on the connection of the Scriptures with this subject, but I hope to be excused for mentioning one other injunction, of universal application to all practices which indirectly injure others. "Wherefore, if *meat* make my brother to offend, I will eat no flesh while the world standeth, lest I make my brother to offend;" or, applied more particularly, "If wine-drinking leads one brother in a hundred to be a drunkard, I will drink no wine while the world standeth, lest an example might lead my brother to this dreadful practice."

Now, to come to wine-drinking France. We have two kinds of testimony from those who have visited that country. The witnesses are those who saw the evil, and those who did not. Now, in all candor, are not the latter class like the Hibernian, who denied, in court, having stolen the axe? "But," says the judge, "here are two witnesses that say they saw you take it." "Viry will," said the prisoner, "an' I can bring twinty witnesses that didn't see me take it."

According to recent testimony on the subject before Parliament, the wine usually sold contains 10 to 40 per cent. alcohol. Brande, in 1813, found "raisin wine" to contain 26 per cent.; port, 25 per cent.; sherry, 19 per cent.; Madeira, 22, and claret, 17 per cent. of alcohol. Now, I ask how such drinks as these can be used as a *common beverage, to prevent intemperance?* Is it possible for everybody to drink daily of such large portions of alcohol, without many acquiring a strong appetite for it? The thing is impossible! We might as well propose to set fire daily to some of our dwellings in the city, in order to prevent a conflagration. According to Brande, brandy, rum, and Irish whisky, contain each 53 per cent. of alcohol, and gin 51 per cent. Can any one inform me in what way it will be safer to drink two pints of port wine, containing over two gills of pure alcohol, or one pint of Irish whisky, or brandy, also containing two gills of pure alcohol? I can not split hairs with sufficient skill to point out the difference.

Knowing these facts, I should not wish, for my own convincement, to bear testimony whether a people can drink wine as a common beverage, and remain a temperate people. The cause must have its effect, as sure as water will run down a hill; and, if facts are only investigated thoroughly, not superficially, no other results, it appears to me, can possibly be reached than those startling ones mentioned in the last number of the HORTICULTURIST. Allow me to add a few, which I derive from a recent letter of a distinguished American gentleman, who is not regarded by many of his friends as very ultra on the temperance question. He says that, when recently in Paris, a wine-merchant directed him to one of the many hidden places where he could see the effects of wine-drinking. The following is his description:

"At the lowest, five hundred persons had already assembled, and the people were flocking there in droves; men, women, and children, whole families, young girls alone, boys alone, taking their seats at tables; a mother with an infant in her arms came reeling up to one of the tables.

"It was an immense establishment, occupying three sides of a square, and rapidly filling with wine votaries. I saw hundreds in a state of intoxication, to a greater or less degree. All, or nearly all, had wine before them. This place was considered a rather respectable wine-shop. My guide then took me to another establishment, not ten minutes' ride from the emperor's palace. The scene here beggars description. I found myself in a narrow lane, filled with men and women of the lowest grade. * * * *

I then entered into the outer room of the establishment, which was full of the most degraded human beings I ever beheld, drinking wine, and talking in loud voices. The cabman informed me he had often seen here eighty to one hundred and fifty lying drunk at a time. *They remained there till the fumes passed off; for, if found drunk in the streets, the police took them in charge.* I was told there were hundreds of such places in Paris. I am convinced that the emperor has more to fear from the wine-shops than all other sources united. They furnish the material for riot and revolution, and the wine drank in them is the stimulant to every vice. Americans and others visiting the fashionable walks of Paris and other continental cities, seeing but few staggering men in the streets, honestly suppose that wine countries are, in a great measure, free from the vice of intemperance; but it is a great mistake."



RUSTIC ARBOR.

DESIGNS IN RURAL ARCHITECTURE.—No. 5.—RURAL OUT-BUILDINGS.

BY GEO. E. HARNEY, LYNN, MASS.

THERE is nothing which serves so well to give an air of finish to a country place—be it large or small—as the introduction here and there, wherever a suitable place offers itself—either in some sly, out-of-the-way corner, or at the termination of a long footpath—of cozy, vine-embowered summer-houses and inviting rustic seats; of pleasant observatories wherever a good view

may be had ; rustic play-houses for the children, and ornamental flower-vases. In fact, any sort of rustic structure is a pleasing addition to the grounds, especially if fragrant with overrunning vines, and half hid among trees and shrubbery.

The designs which we offer at this time are specimens of this class of buildings, and comprise views of two summer-houses, an observatory, and a pump or well-house.

No. 1 is a Rustic Arbor, to be built of rough, untrimmed sticks of white oak or red cedar. The principal sticks should be selected from three to four inches in diameter, and as nearly straight as possible ; these are to be used for posts, plates, girders, and principal rafters. The rest, forming the ornamental work, may be from half an inch to two inches in diameter. The roof



OCTAGON SUMMER-HOUSE.

is to be covered with bark, put on in the overlap manner, the same as shingles. Seats are built around the inside, and a table in the centre, all of the same stock.

No. 2 is an octagon Summer-House, requiring more of the carpenter's skill in its construction than No. 1. The roof curves up as shown in the view, and is covered with ornamental shingles. One of the sides of the octagon forms the entrance ; the rest are fitted with blinds, which rise and fall by means of pulleys, forming by this means either a close or an open arbor. It has a seat around the inside like No. 1, and a couple of movable tables.

NOTES UPON THE HOLLYHOCK, WITH A DESCRIPTIVE LIST.

BY DANIEL BARKER,

Gardener to B. K. Bliss, Springfield, Mass.

For many years there has been a steady progress in the Hollyhock in the form of flower, size, and texture of petals, as well as in color. The great attention which has been devoted to this plant by such eminent florists as Chater, Turner, Paul, and others in England, has been rewarded by the production of such beautiful varieties as leave but little to be desired. The new varieties of the last few years possess much excellence above those of an early date, not only in the form and outline of the flower, but in size and color, and in the length of spike.

Scarcely any flower is more attractive in the flower-garden than well-grown specimens of the improved varieties of Hollyhock; the abundance of their bloom, and the beautiful and brilliant shades of color, combine to render them universal favorites for the decoration of the lawn, shrubbery, and flower-garden. A well-grown plant, of from four to six feet high, when in bloom, presents a blaze of beauty which is not surpassed by any other plant in the garden.

I now propose to enter upon what would doubtless prove both a thankless and invidious task if undertaken in any other than a spirit of integrity and honesty of purpose, viz., the investigation of the claims of a few of the best of upwards of eighty of the finest varieties raised in Europe, and now flowering (August 1st) in magnificent condition at this establishment.

Black Prince—(The best of its class).—Nearly black; a fine, large, and full flower, very attractive.

Brennus.—Rosy crimson; a beautiful large full flower, with good guard petal and excellent spike.

Beauty of Walden.—A beautiful soft rosy pink, with excellent guard petal, spike close, and free habit.

Canary.—Fine light yellow; flower full and very compact; habit good. (New.)

Beauty of Beechwood.—Dark rosy crimson; large, full, and very double; one of the finest varieties yet sent out. (New.)

Comet.—Ruby red; flowers full and very fine.

Duchess of Sutherland.—A beautiful bright rose; a noble flower; spike close and habit free.

Eliza.—Light pink; compact and full.

Eva.—A beautiful flower; delicate peach color; centre fine and very round.

Felicia.—Light amethyst; a large full flower, with broad guard petals; habit excellent.

Figaro.—A beautiful mottled variety; flower very full, and fine spike; close and extra habit.

General Bem.—Fine bright scarlet; flower very large and full; one of the very best of the high-colored varieties.

Hon. Mrs. Ashley.—Rosy carmine; flower large and double; spike very compact.

Lizzy.—Delicate rosy pink; fine form and excellent habit.

Lady Willoughby d'Eresby.—Creamy white ; form and substance very fine ; an excellent variety.

Lemonade Improved.—A clear bright lemon ; a distinct and fine variety ; indispensable in a collection.

Mr. Seeley.—Shaded salmon ; a very fine flower, with broad guard petals ; an excellent variety.

Mrs. Foster.—Soft bright pink ; large, full, and very double.

Pourpre de Tyre.—A rich dark purple ; a noble and excellent variety.

Pink Perfection.—Clear rosy pink ; large full flower, with broad guard petals ; a distinct and beautiful variety.

Penelope.—A beautiful deep rose ; large, full, and very double.

Magician.—Bright cherry ; flowers very full, with good broad guard petal ; spike extra fine ; a novel and beautiful variety.

Sir Colin Campbell.—Dark red ; very large and full ; an excellent variety.

Saturn.—Bronzy yellow ; a fine distinct variety.

Sceptre d'Or.—Golden saffron ; medium size, very double ; an attractive variety.

[The improved Hollyhock is a noble flower, and should be more commonly grown. We have seen some of the above kinds, and know them to be very beautiful. Mr. Barker's article would have been more complete if he had added a few words on cultivation. Perhaps he will do so yet. New varieties are obtained from seed, and prized kinds are propagated by cuttings and by division of the roots.—Ed.]

LANDSCAPE ADORNMENT.—No. III.

BY GEO. E. WOODWARD,

Civil and Landscape Engineer, 29 Broadway, New York.

Ornamental planting, artistically considered, is a grade of landscape adornment but seldom attempted, but it is one that should receive attention in the present condition of landscape art, an art that is rapidly winning its way to every rural home of taste and refinement. True art, when used in beautifying a country estate, will not consent to an indiscriminate and meaningless jumble of trees and shrubs, but will take advantage of the many varied and striking effects of color, form, light, shadow, aerial and linear perspective, and other appliances of high art, which, with all their combinations, go to make up resources for composition that are inexhaustible.

A group of trees all of the same kind is tame and uninteresting, and no one would plant in this manner, if he understood art. A group is more attractive if variety is a prominent feature ; not only variety as regards form, but variety in color, and variety in form of that color. If we study natural scenery, we see no sameness of color ; the grass at our feet is a positive green, that in the middle distance is a negative green, and that in the far distance is purple or grey ; every advance towards distance from the point of observation neutralizes the positive colors of the foreground. It is an easy matter to separate the colors and sizes of trees, and plant them to produce the same aerial perspective effects shown in nature ; that is, to take advan-

tage of the hint nature gives, and plant so that the eye runs off from color to color, and from point to point, until it gets the distant view.

Suppose we wish to plant a vista, and have it end with a distant view of the Hudson: the frame for this little cabinet piece is to be on our own grounds, the view to be seen from only one point, perhaps our library window: in the foreground we plant the tallest and most positively colored trees, warm bright greens; beyond these, approaching each other and diminishing in size, we introduce masses of trees of a negative tone of color, using several species in each mass, then continue with group after group to run down the tones of color, until you terminate with the coldest and most negative, and nature then continues her regular graduations far off to the final distance; the reverse of this has a contrary effect, and, judiciously used, one may widen out and narrow up an estate, and produce many curious effects.

Perfect familiarity with the adaptation, resources, and combinations of color, should be an acquisition of every Landscape Artist, if artistic and beautiful effects are to be produced, and this knowledge of color can be acquired at the easel in the same manner as the landscape painter acquires it. With the rural artist there must cease to be experiments; there must be no guess-work, nothing to be done a second time, and withal a system of economy in his operations, the results of which will illustrate the fact that High Art in landscape operations is not only far more beautiful and satisfactory, but its economy recommends it strongly in advance of any experimental system that has yet been devised.

Groups or masses of trees should be composed of different varieties; we would not, however, select ten varieties, and form every group of these ten, but by combining size, form, color, etc., we increase our resources for variety a thousand fold. He who plants groups with one kind of trees, ends his varieties with the number of different species of trees; but he who introduces form, size, color, light, shadow, relief, aerial perspective, etc., can produce endless and beautiful changes.

A group of a single species of tree lacks art; but bring out the deciduous Cypress in strong relief against the Scotch Pine, and you have an effect that will command attention; then carry the Pine into the distance, and interpolate the colors that graduate between it and the Cypress, and in an artist's hands there is the material for much that is attractive. We advocate bold effects, strong contrasts, strong lights, and heavy shadows, but we want the material for such effects, not the monotony unavoidable by the repetition of a single species of tree and a single color. By a process of this kind, one is enabled to multiply masses, groups, belts, vistas, avenues, etc., ad infinitum, and avoid understandingly any repetition. We are well aware that a distinguished author on landscape gardening advocates the planting of groups, by using single varieties of trees, and for this reason. Eight kinds of trees occupying the same position in eight groups, would produce eight groups exactly alike, while if each group were composed of one of the eight varieties of trees, there would be eight groups entirely different; but there is nothing arbitrary in the form of the group, nor the height, nor color, nor are we confined to any particular number, sizes, shapes, or varieties of trees, but we have an endless variety of conditions that admit of an endless variety of change. Eight notes in music exactly similar yield no variety; the eight notes of the scale produce a never-ending charm.

In the arrangement of groups the principles of aerial perspective can be introduced with fine effect, and each variety or color of tree brought out in strong relief against the one behind it, while at the same time appearance of size and extent is conveyed, which does not really exist.

"Where to the eye three well-marked distances
Spread their peculiar coloring, vivid green,
Warm brown, and black opake the foreground bears
Conspicuous: sober olive coldly marks
The second distance; thence the third declines
In softer blue, or, lessening still, is lost
In fainted purple. When thy taste is call'd
To deck a scene where nature's self presents
All these distinct gradations, then rejoice
As does the Painter, and like him apply
Thy colors; plant thou on each separate part
Its proper foliage."

To illustrate the effects that may be produced by groups, let us study a view up or down the Hudson, or any fine river with projecting headlands; we see the atmospheric changes of color more decided; that is, the eye is not led off imperceptibly from the positive foreground colors to the negative tints of distance, but we skip from one to the other, and in this manner see each headland grow more negative in color as its distance increases. An unpractised or an uneducated eye sees no different tones of the same color in a broad landscape view, but we all know that distant hills, mountains, or shores appear near by or far off in the atmospheric changes that take place between a warm bright yellow sunlight, and a dull grey cloudy morning.

LATE CHERRIES.

BY JOHN B. EATON, BUFFALO.

The cherry season began with me this year on the 14th of June, with the Early Purple Guigne, just a week in advance of the earliest date at which I remember ever to have had ripe cherries. Belle d'Orleans was probably ripe about the same time, but was accidentally overlooked until several days afterwards. In view of the uncommon earliness of the season, the 4th of July, instead of being, as usual, the height of the cherry season, (or even, in some years, the very beginning of it,) became a sort of starting-point from which to reckon late varieties. Those ripening with me after that date were, Morello and Royal Duke, on the 5th; Sweet Montmorency and Sparhawk's Honey, (the latter doubtful,) on the 7th; Flemish, 10th; Tradescant's Black Heart, 12th; Archduke, 14th; Late Duke and Belle Magnifique, 20th. (My Late Duke is undoubtedly Belle Magnifique.)

On the 24th, the following were exhibited before the Buffalo Horticultural Society: Archduke, Buttner's Yellow, Sweet Montmorency, May Duke, and Belle Magnifique, most of them in good preservation; but, except the May Duke, none of the highest quality. This latter sort I esteem the most valuable for all purposes of all that I grow, (over thirty varieties.) It began to ripen this year—as it has also done before—on the 22d of June, and there are some still hanging upon the trees to-day, (July 28th.) Three days since I gathered a small quantity, of which the flavor was exceedingly rich. Its

very peculiar habit of ripening by installments—some branches, or even trees, being a fortnight or more later than others—gives it a longer season than any other sort that I know. We have some trees, indeed, which seem to differ a little in a few particulars from the others, for with the general characteristics of the May Duke, their fruit is usually rather more heart-shaped, a little firmer-fleshed, and slightly later. This I have before mentioned as Late May Duke. I am not quite satisfied yet of its being a distinct sort, but incline to that opinion.

Sweet Montmorency was rather better than last year, very sweet, juicy, and of pretty fair quality, when very ripe, but quite too small to be valuable; with high cultivation, which I did not give it, it may prove of more value. Belle Magnifique is very handsome and large, but entirely too acid to be palatable. Royal Duke pleases me much; it was this season quite large, (larger than May Duke, to which it bears a strong resemblance,) and of a rich, although rather acid, flavor. Of the several other varieties above named, I entertain but a poor opinion, not deeming either of them worth growing.

WILD DELAWARE GRAPES.—NOT HARD TO TAKE.

BY J. B. GARBER, COLUMBIA, PA.

Although a subscriber, and a reader too, of the Horticulturist, for many years, I have rarely intruded on its pages with any of my thoughts, well knowing that others could furnish matter of more interest to its readers. Now, however, as a direct question has been thrust at me, I crave a corner in its valuable pages, to be heard in response.

In the August number, p. 377, your "Buffalonian Reviewer," quoting from p. 524 of last vol., "Delaware grapes found in three different locations in a wild state," says, "This is pretty strong evidence in favor of the American origin of this fine fruit," and asks, "Does the opposing party give it up yet?" No, sir, not quite yet! not until some more *reliable* proof is brought forward of its *wildness*, than has yet appeared. *Were* these grapes found *wild*, as stated? Ah! there's the rub! They were not only *not* found wild, but were actually taken from gardens in Buck's Co. or the Jerseys, where the grape is well known, and of course highly esteemed; its original name having been long since lost, it is now known as the "Jersey grape," "Ruff grape," etc. The reader may say these are *mere assertions* and not proof. Well, to uncover the mystery a little further.

One-third of a bunch of grapes was sent to me by mail, fall of 1859, *for a name!* I pronounced them Delaware! Bunches were also at the same time handed to several members of the Philadelphia Horticultural Society. They too said they were Delaware! Then it was *attempted* to make it appear "that these bunches all came from different localities *in a wild state!*" In addition, we may say, without betraying private correspondence, we were told, that "they could direct us to at least twenty places where the Delaware grows wild—*as truly aboriginal as the rocks around it!*" Well, our curiosity was excited: we had a committee of three appointed by our "Fruit Growers' Association," to visit some of those localities; were willing and anxious to "spend time and money," and travel hundreds of miles in search

of such wonderful *wild grapes;* though we were at the same time confident it would end in a "wild goose chase." Still, there is a peculiar propensity in our nature to seek after and discover truth, be it "at the bottom of a well" or in the wilderness! It was, however, more to gratify a curiosity, as well as confirm our *un* belief in their *native* origin, or prove by ocular inspection that we were mistaken, and thus set the question at rest. Either result would have satisfied us equally well. Time and again have we applied to the parties, who so confidently asserted "That a class of wild grapes is growing on the head waters of the Delaware River, of which *they say* the Delaware grape is the type." Even aside from the pretence that it was growing wild, it was pronounced a true native American *botanically*, and also as "having that Muscat or *Pole-cat* aroma so peculiar to *American grapes!*"

And why, then, knowing so many localities where it is growing wild, did they not at least direct our steps to a few of those localities, where *'tis said* those luscious bunches were found? Yes, why? Echo answers, Why? Thus, our "seeking after knowledge under difficulties" was frustrated, and we are bound to believe there are no *wild* Delaware grapes in existence. We were even told, when inquiring about these localities, "that they had said all they wished to say on the subject." Did we touch them on a tender spot?

All the vines of this variety, though scattered thousands of miles over the country, can be traced to a single locality, the garden of Judge Provost, at Frenchtown, N. J., and to a time antecedent to the advent of any *American* grape superior to Alexander, when there was quite as much of a "grape mania" raging as now, but was then confined to foreign varieties—from 1820 to 1830. Except in rare instances, the exotic grape was a failure. Mildew, if not the sole cause, was at least the chief cause of failure. Then the Catawba and Isabella were discovered, and as a dernier resort, planted, and gradually spread over the country. Thus we are constrained to believe that the Delaware is one of the many varieties that were imported at that time from every climate where vines could be found; and by a long residence in the country, or from a natural or inherent hardiness, has withstood our variable climate, and now is acclimatized. Though a certain editor may say "we jump at conclusions," we nevertheless think the evidence will fully sustain us in calling it an exotic, a true *Vitis vinifera*, as much so as Black Hamburgh or Chasselas; at least until some more *reliable* proof is brought forth as to its American origin.

Do we give it up? Is your critic answered?
If not, then we shall have to increase the dose!

[It may be conceded that the "Delaware is *not* found in three different locations in a wild state," without deciding the main question at issue, the nativity of the Delaware; though, if it had been so found, there would, of course, have been an end to the controversy. The question must be decided, as we think, on internal evidence; but we leave it for the present in the hands of "A Buffalonian." We should be glad, however, to have Mr. Garber trace the Delaware "to a time antecedent to the advent of any *American* grape superior to Alexander," because, if he can do so clearly, he will present evidence to clear up this subject in the minds of many who are inclined to regard the Delaware as a native.—Ed.]

NOTES ON ROSES.

BY J. PENTLAND, BALTIMORE, MD.

The question has been so frequently put to me, "What are the names of the best new roses, or the best old varieties?" that I propose to answer some of the inquiries through the columns of your valuable journal, by your permission.

Before proceeding to reply, let me ask, What would you term the "best?" do you want the "best shape, or the best blooming, or the best growing rose?" I rather presume people want all three combined, which is certainly a rather difficult matter to obtain; for, as you well know, some of the best formed and most magnificent roses grown, bloom but once in the year, and are generally termed June Roses; others, again, of a class but little removed from the former, are called Autumnal Roses, or such as bloom twice in the season, June and September, or October; then we have the Hybrid Perpetuals, or those that (according to their name) should be constant bloomers, but I am sorry to say, that very many so called are any thing but constant; true, they are Hybrids, but the perpetual should be left out. Then there are Hybrid Chinas, and Hybrid Bourbons, and Hybrids without end, but a "rose by any other name will smell as sweet."

I shall only speak of such roses as I have, and have seen bloom; notes of such I made at the time they were in bloom, and it is truly astonishing the advance that has been made of late in the production of really fine roses; and yet there are many of the older varieties, known to nearly all lovers of the rose, (and who don't love a rose?) that I would not exchange for half the new ones sent out.

I received last winter some twenty or more of the newer roses of Europe, and not many of them have as yet been able to obtain sufficient strength to show their true qualities, either with regard to bloom or habit. Another year will determine that point, provided we get rain enough to keep them alive in this locality, for roses and every thing else are at a complete standstill, and the leaves of roses are wilted and shrivelling for want of rain. Roses (with us) planted out this spring, have not made any growth, and unless we get rain soon, hundreds of them must die unless water is convenient for irrigation.

Among the finest new roses that promise well is Altesse Imperiale, a very dark, glowing, velvety crimson and purple, of a good shape and size, and will be quite a favorite. Anna de Diesbach is a most beautifully formed, very large and distinct rose, of a brilliant rose-color. Ardoisée de Lyons is an extraordinarily large rose, of a very deep purple color, and will, I have no doubt, prove a splendid rose. My plants were very weak, consequently did not bloom very well. Comtesse Cécile de Chabrillant (what a name!) is a most beautiful satin rose, of exquisite shape, and large; a superb rose, without doubt. Virginale is of a pearly white, having the palest tint of flesh-color in the centre; it is not so double as some others, but it is beautiful in bud, and constant in bloom; it is now in bloom for the third time this season; it will be a great favorite, as its color is scarce among the Hybrid Perpetuals, Dr. Henon being the nearest approach to it. Reine de Cite is a very full and finely formed flower, of a clear rosy pink, and promises well. De la Mothe is a light and very brilliant crimson color, without that shade of purple that so

many have; it is a good standing color, and quite a distinct and good rose. Bouquet de Marie is another nearly white, with a light pink centre, a rose flowering in clusters; a nicely formed small rose. Armid, a brilliant rosy pink: the outer petals of this rose are a little paler; the foliage is very dense, and its habit is good; it is a very distinct and beautiful rose. These are the newest of the Hybrid Perpetuals that I can speak of at present knowingly. The following I will be able to speak of again: Eugene Appert, all my plants died; they were too weak to withstand the voyage. Lord Elgin promises well; the foliage is very fine. The following are highly spoken of as being very superior: Emperor de Maroc, a glowing velvety crimson; Eugene Alary, lilac rose; Anna Alexieff, bright rosy carmine; Joseph Vernet, pink; Le Mont Vesuve is said to be the best of the dark-colored ones; L'Oriflamme de St. Louis, something after the style of General Jacqueminot, its parent: with many others of the same class, too numerous to mention, without being able to speak knowingly of them and their qualities.

Of the new Bourbons there are very few as yet very distinct: Docteur Berthet has bloomed with me; it is a deep reddish purple, of good size, and free; Edith de Murat is a very pretty white rose, rather small, with a slight flesh tint; Octavie Fontaine promises to be a pure white, of good form and substance. Of the new Teas, I like Madame Joseph Halphin, a cream, or rather blush white, with a beautiful carmine tint on the outer edge of the petals; it is a good grower, and of first-rate form, and double; Madame Damaizin, buff, salmon tint; this is a distinct and beautiful new rose. Among the best of the newer Teas are the following: Madame Maurin, cream and fawn; Madame Barillet Deschamps, white cream, centre large and full, very fine; Louise de Savoie, pale sulphur yellow, good habit and large; but what can excel Gloire de Dijon among the Teas, grown upon its own roots? it is a most constant bloomer, and is every thing that is desirable in a rose. But there are many others that are really fine and desirable which I shall take occasion to speak of again. Of the older varieties of the Hybrid Perpetuals, the following are as yet scarce and very fine, and should be found in every garden: of dark colors, Triomphe des Beaux-Arts, velvety purple, not double; Bacchus, crimson, rather dwarf habit; Thomas Rivers, rosy pink, brilliant; Prince Noir, very dark purple; Prince Leon, light crimson, splendid; Pauline Lansezeur, violet red, a charming rose, constant bloomer; Monsieur Ravel, velvety scarlet, a first-rate rose; Monsieur de Montigny, rose, very brilliant, large, a splendid new rose; Ornement des Jardins, deep crimson, good form, not large, but double; General Brea, bright rose, very large and full; Empereur Napoleon III., velvety scarlet and crimson, shape imperfect; Duc de Malakoff, deep red; Ambroise Verschaffelt, deep rose and purple, petals thin; Triomphe de l'Exposition, rosy crimson; will always be a favorite, free bloomer; Triomphe de Montrouge, carmine, a superb color, not large, but well formed; Souvenir de la Reine d'Angleterre, bright rosy pink, a beautiful color, with very large petals—this is a noble rose; Reine de Denmark, pale rose and flesh—this is as large and fine a rose as blooms; Maria Portemer, plum, velvety, large and constant bloomer, fine; Louis Chaix, dark brilliant crimson, brighter than Geant des Batailles, fine form and good; Cardinal Patrizzi, velvety crimson, very dark—this, I think, is the best improvement upon all of this color; Evéque de Nimes, a brilliant scarlet crimson, a superb color, flowers very large and full, of beautiful shape and

splendid foliage—this is a very distinct and altogether beautiful new rose, and one of the best of the color. But I fear I have exceeded the bounds of propriety, and shall occupy more space than you can allow in one number of your magazine, and yet there remains a vast number of really beautiful and choice roses, both of old and new varieties of Hybrid Perpetuals, Bourbons, Teas, and Noisettes, which I must reserve for another occasion; and should I find time I would like to offer some remarks with regard to budded roses and roses grown upon their own roots.

[We shall be glad to have you continue the list; and hope you may soon find time for the remarks on budded roses, though we do not hesitate to say in advance, that they have not found much favor with us of late years.—Ed.]

NOTES ON PEACHES, PEARS, ETC.

BY ROBERT CHISOLM, BEAUFORT, S. C.

I NOTICE by the agricultural papers of Baltimore, that late spring frosts have lately cut off the peach crop so frequently that the growers of this fruit are disposed to give up its cultivation in despair. I do not know that I can suggest an infallible remedy, but think that I can offer a plan of treatment that will occasionally save a crop. It is simply in the fall or early in the winter, to pile up around the root of each peach-tree a quantity of manure of any kind, and let it remain there until all danger from late frosts has passed, and then this manure can be taken away and applied to any other crop. At the South, where poles are plentiful, four poles of any kind may be lightly notched together in the form of a square, like a log-house, around the root of the tree, to confine the manure, or, where more convenient, four boards may be tacked together and taken away when the manure is taken. It is a well-established fact, that trees, &c., bloom earliest in high, dry, sandy soils, because they are dry and warm, though the produce is comparatively small; while in low, moist, rich soils they are much more backward in blooming, yet the crop is more abundant. The object aimed at in the application of the manure is, to change the character of the soil, and thus escape the injury, and also the little heat generated by the decomposition of the manure, by ascending into the head of the tree, assists in warding off the injury. Sandy soils well manured and mulched become rich and moist, and therefore cool, and thus vegetation may be sufficiently backward to save the fruit. This fact may be useful for many other purposes, especially where very early crops of vegetables, &c., are desired, as paying better than later though larger ones. The above plan has been adopted with success by some of our growers of the sweet orange, and is recommended as worthy of a trial on a small scale at least.

Having a Peach orchard, that has heretofore been free from the curculio, invaded this season partially by that little pest, I have devoted more particular attention to its natural history, as far as opportunities offered. With us the curculio punctures the fruit at three different stages of its growth: first, just as the blossom drops, the fruit dropping also soon after; next, when the stone begins to harden, when the worm eats directly through the stone, and then the fruit drops. At these two steps the fallen fruit may be

gathered and the worms destroyed; but the third attack proves harder to conquer, for this takes place just as the fruit begins to swell, and then the worm eats out and drops on the ground before the fruit is ripe enough to be gathered or eaten. How this last attack is, to be successfully resisted I can not see, and therefore despair of ever getting rid of them in this flourishing and productive young orchard. My only hope of getting any more Peaches free from the curculio is, to start a new orchard at a distance from any old one; and this I intend to do next winter, finding an abundance of Peaches too great a luxury to be dispensed with. I do not know whether the curculio goes through one, two, or three generations each season, but having some of the worms safely housed in a vial of earth, will soon know how long it will be before they emerge as beetles or perfect insects.

Downing, in treating of pruning the Peach, recommends leaving a leaf-bud at the end of each shoot, in order that the fruit may ripen better. I do not know how true or necessary this may prove with you, but I can affirm, from many observations, that this is not necessary here, as the Peach will grow and ripen just as well when there is no leaf for several buds below it, and it stands alone at the end of the shoot.

I suppose that the quantities of Southern grown Peaches sold in your market have convinced you all that Clingstone Peaches are quite equal in every respect, and generally less acid with us than the Freestone varieties. With us they are generally preferred as both more juicy and vinous.

My orchard, at least the bearing trees, are entirely seedlings, and larger, handsomer, and finer fruit I have never either seen or tasted, and I have seen and tasted a few varieties in the course of my life. I have most of the best varieties in cultivation, but as the trees are young, and few have borne fruit, I can not draw any fair comparison, and, thanks to the curculio, may not be able to do so for years to come. My seedling trees were not grown for the fruit, but were from stones of fine fruit, and sown for stocks to bud upon, and as many used for this purpose as wanted, and these being left, were set out in my yard in the woods. Among them all there is not one single indifferent or inferior Clingstone, while the Freestone varieties are mostly of only medium quality, several partaking largely of the Nutmeg, and not one, in my opinion, a first-rate fruit. The Clingstones reproduce themselves with much more certainty, and can be generally depended upon, while most of the seedlings of the Freestone will prove medium sized, mealy, inferior fruit. The worm also injures the Clingstone Peaches much less, for while it eats all around the stone in the Freestone Peach, in the Clingstone a small part of one side of the fruit suffices for its support, and the worm cuts out and drops to the ground before the fruit is ripe, and then the Peach ripens.

I will send you another small box of Pears for samples, as several varieties are now fit to be gathered. Further experience and closer observation satisfy me that the Rousselet de Rheims, at least what I have as such, is the best Pear of its season, and indispensable in every orchard where a succession is desired. I think more of it each succeeding year. The samples that I sent you were much smaller than some that I gathered afterwards, but they were of fair average size. The Bonne d'Ezées were unusually small, owing to too many having been left on the tree, which is still small. It is an early and good bearer, and the fruit is very tender, delicate, and juicy, but it lacks flavor, in my opinion, and the wood cankers badly. I will send you, if not too ripe, a few larger specimens in this box. I send

you also a few Pears of a tree sent me by A. Leroy, of Angers, as the Beurré de Bollwiller, but there must be some mistake, as this proves a midsummer instead of a winter fruit. It proves a vigorous grower, early, and a too abundant bearer, and the fruit very tender, juicy, and delicately but not highly flavored. You will find it marked 133. The White (No. 10) and Grey (No. 76) Doyenné, I suppose that you will readily recognize. Both are larger, especially the Grey, than usual, but I am afraid the latter may prove knotty.

I send one or two samples of my Golden Beurré of Bilboa, (57,) but I am not certain whether it is really that Pear or the Buffam. I received both at the same time from the Parsons, in Flushing, and think that I lost by blight the latter. It grows very vigorously upon the Quince, and bears early, but too abundantly. Do tell which variety it is. Lastly, I send you a few Bartletts, which I suppose that you will readily recognize; therefore will not mark them. The Bartlett does well upon the Quince, bearing larger and earlier ripening fruit upon that stock than upon the Pear. I received, years ago, from Paris, a tree labelled Bonne Enté, whether rightly or not I can not say, but certainly a very different fruit from the White Doyenné, somewhat resembling the No. 133 (now sent) in shape, but about double its size, and now about ten or fourteen days since gone. I have not found it an early bearer, but when it did begin it proved too productive, like many others. What I mean by "too productive" is, that unless the fruit that the tree sets is heavily thinned out, it must prove both small and inferior. If you desire it, I will continue to send you samples and the results of my experience with them, remarking here, what may prove nothing new to old diggers like myself, but of importance to beginners, that without the aid of an experienced Pear-grower, it requires several years' crops of any new variety before it can be fully learned when the fruit ought to be gathered, and when it is ripe; though, with few exceptions, it requires less experience to teach the thumb when to know the latter state.

I would like to have sent you a sample or two of the "Delices de Charles Van Mons," but I thought that they would not keep until you would receive the box. It is, however, a very indifferent fruit, and the tree cankers about as badly as the Beurré d'Aremberg. I forgot to say above that the Bonne Enté is a very tender, juicy, and delicately flavored fruit, that just about fills up the interval between the last of the Rousselet de Rheims and the first of the Bartletts, and therefore I set a higher value upon it than I would were it to ripen at any other period when pears were plentiful.

[The application of manure to a dry, sandy soil, as proposed above, would have the effect of starting the buds sooner than would be the case without such application, and would, therefore, we should suppose, rather increase than lessen the evil complained of. A dry soil is warmer than a moist one, just as a rich soil is warmer than a poor one; but the application of a large body of manure to any soil would have the effect of making it warmer than the soil immediately surrounding it. In the above case, the application of the manure in the fall doubtless protects the soil from variations of temperature, and may thus be of use; the tree will be the better for the application in any event. Are you sure of the *third* attack of the curculio? We have been watching the little Turk very attentively, but have seen nothing like that. We shall have an article on this subject from Dr. Trimble soon, from which you will probably be able to gather something to assist you in

overcoming the curculio. The first lot of pears you sent came in good condition; the second arrived in the midst of our "heated term," and fared badly. Some of them were entirely gone, and others partly so. What you sent as Golden Beurré was not injured; but it is neither that nor the Buffam, but the Fulton, and as fine as we ever saw it. The Rousselet de Rheims was small but delicious. The Bonne d'Ezée very good. The Beurré de Bollwiller was not, of course, that variety, but we could make nothing of it; in the midst of its decay, however, it seemed to be a very fine pear. The White Doyenné was gone; the Grey Doyenné, however, was in good condition, and large, but gritty. The Bartlett was also gone. Of all you sent, the Rousselet de Rheims was best, and the Fulton next. We conclude, from the specimens sent, that you are in the midst of a grand pear region, and that you are profiting by it. How is it with Grapes?—Ed.]

ROSE CHAMPION GERANIUM.

(See Frontispiece.)

Our frontispiece this month is a drawing of a fine American seedling Geranium, named *Rose Champion*, raised by Mr. Cranstoun of Hoboken, N. J. It has been exhibited several times about New York, and pronounced by good judges a first rate flower. We esteem it one of the very best of its class; indeed, we do not remember a rose-colored Geranium with so fine a truss or of more brilliant color. Our engraving was made from a truss of medium size, and conveys a good idea of it. The flower is well formed, the petals are of good substance, and the color is a clear bright pink, changing to white at the point of insertion. The flower stalk is stout, and the head large and round as a ball, the flowers opening in succession for a long time. The leaves are of medium size, with a circular shading of dark velvety green. The habit of the plant is compact and dwarf, and it is a good bloomer, coming into flower when only a few inches high. What disposition Mr. Cranstoun will make of it we do not know, but hope that by some means it will get abroad.

IMPROVEMENT AND DOMESTICATION OF THE WILD CHERRY.

BY D. L. ADAIR, HAWESVILLE, KY.

Most of our cultivated fruits are in an artificial state, and not natural forms, many of them unpalatable, and some of them, in their original condition, are even deleterious, if not poisonous, when taken into the stomach. The apple originated from the wild crab of Europe, and from the few kinds cultivated by the Romans the number of varieties has increased until in this country alone there are now more than 2,000. The peach had its origin, according to some authorities, in the bitter almond, as did also the apricot and nectarine. The pear, in its wild state, or even as cultivated three or four centuries ago, was seldom eaten except when cooked or made into some kind of conserves. The finer varieties of raspberry are the result of high



THE IMPROVED WILD CHERRY.

cultivation and reproduction by seeds, of a kind of raspberry no better than our common wild varieties; in fact, the Catawissa and several others are sports of the natives of our fields and forests.

Nearly all of our esteemed fruits are of foreign origin; for, although the forests of the United States abound in wild fruits which are susceptible of the same improvements, very little, if any, attention has been given to them; the principal reason of which is, that the time required and the uncertainty of the result are too great for individual enterprise; and if ever undertaken to any extent, must be under the fostering care of government, or through the enterprise of wealthy individuals or associations.

Nature, however, sometimes gives us strong hints of our neglect, in exhibiting an inclination to improve upon the original type. The foreign grapes have always refused to be naturalized to our climate, and it never occurred to the vine-growers of the country that their places could be supplied from our inferior wildings, until, by a freak of nature, the Catawba was produced from the *Vitis labrusca*. The Isabella and Diana followed, demonstrating in what direction we should look for our supply of grapes and wine. Now some of our nursery catalogues contain the names of more than a hundred native varieties, almost entirely superseding the foreign ones. And I have no doubt the day will come when a like improvement will take place in all of our wild fruits; for all of them sport more or less, in size, shape, flavor, and season, and it is only necessary to take advantage of these sports to obtain superior varieties, better suited to our soil and climate than those now in cultivation.

The cultivated cherry is a native of Asia Minor, with the exception of some of our sweet cherries, which sprung from the bitter Mazzard of Europe, is badly suited to the climate and soil of a large portion of our continent, and is subject to many diseases; so much so that in some large sections the trees are rarely planted, while the forests abound in the wild Virginian cherry, (*Cerasus Virginiana* of *Michaux; Cerasus serotina* of *De Candolle; Prunus Virginiana* of *Linnæus*, erroneously.) It bears small white flowers on long racemes, which appear in May, and are succeeded by purplish black drupes (fruit) about the size of a pea, of a sweetish, astringent, bitter taste, entirely unfit for the dessert, and is considered of little value except in flavoring liquors. The wood is used by cabinet-makers, and the bark is one of our most valued medicines in diseases of the lungs, throat, and chest. The tree is of rapid growth, attaining a large size, and as an ornamental tree is valuable.

It is to this tree that we must look for our supply of cherries. As uninviting as it seems, it is possible, even probable, if not almost certain, that a fruit may be produced from this species that will equal in size and quality our present cultivated varieties, and far surpass them in hardiness, healthiness, and thriftiness. As the first step in that direction, I herewith send you a drawing of the fruit of a tree in this neighborhood, which is a wide stride towards the perfection I predict. The tree came up in a fence-corner, about twenty years ago, on the farm of Dr. D. Davison, and since it was four or five years old has borne a crop of fruit every year. The tree is now over twenty inches in diameter three feet from the ground, at least sixty feet high, and drops its fruit over a circle at least forty feet in diameter. The fruit is three times as large as the average of wild cherries, and is entirely devoid of all bitterness and astringency in taste; and although I do

not profess to be a good judge of cherries, I pronounce it equal to the best cultivated cherry in flavor, and all who taste it pronounce the same judgment. It produced this year, I should think, at least fifteen, if not twenty, bushels of cherries, of the size shown in the drawing I send.

I have a number of seedlings from it, now one year old, from four to five feet high, and will plant more seed with the expectation of finally producing something still better.

[We believe Mr. Adair is on the right track. If the Patent Office, instead of wasting some fifty or sixty thousand dollars a year on seeds of which we already have more than enough, would devote a portion even of this sum to the improvement of our native plants, or the exploration of new regions of country in search of undiscovered plants, it would be doing some good, and entitle itself to the gratitude of the country. We wrote to the head of the Department on this subject some five or six years ago, but ineffectually, and nothing will probably ever be done in this way except by private liberality and enterprise.—Ed.]

THE PANSY OR HEARTSEASE—VIOLA TRICOLOR MAXIMA.

BY H. A. D., PHILADELPHIA.

This favorite flower has of late years been brought to great perfection, and blooms exhibited in April last before the Pennsylvania Horticultural Society, might well vie with the finest English varieties, such as we often see pictured in the London Horticultural publications.

Much depends, however, upon the cultivation and season ; several articles have recently appeared in the Horticulturist on their cultivation, but as they all differ somewhat from my own practice, it may not be uninteresting to some of your numerous readers to briefly give my method.

The best season for sowing the seed is about the 20th of September, making another sowing about a month later for a succession. Where plants are desired for blooming in the greenhouse during the winter, the seed must be sown in August. Sow the seed carefully in shallow boxes or seed-pans ; the soil should be rather light and sandy. Keep the boxes in a cold frame or greenhouse, shading them from a hot sun. Be careful not to over-water, as the young plants are very liable to damp off. As soon as the plants are large enough to handle, they should be picked out of the seed-pans or boxes into other boxes, setting them about two inches apart each way. They can remain in a cool greenhouse or sheltered frame until about the first of February. They are then potted into four-inch pots, and kept upon the front stage of a greenhouse until they are sufficiently established, and the weather becomes mild enough to remove them into cold frames, where they should be protected from the cold with sash, observing to give them plenty of air, when the weather is pleasant. Where extra fine flowers are desired, it will be necessary to give them another shift into five or six-inch pots. Two things are absolutely necessary in growing fine Pansies : *first*, to secure *good, reliable seed*, without which all your efforts will be unavailing ; the other is, to give them the very best of cultivation. The soil to grow them in must be a rich compost of decomposed cow manure, leaf mould, and good

garden loam or sods, well rotted. The plants, when coming into bloom, must be frequently watered with clear liquid manure, which can be made of a solution of Peruvian guano, or stable manure with water, well stirred up, and allowed to settle before using. Observe not to make it too strong; as a weak solution frequently applied will be the most beneficial by the above means. I have my Pansies in their greatest perfection during the months of April, May, and June; and where great care is taken in shading, watering, etc., they may be continued much longer. Where plants are desired for planting out of doors, and later blooming, they can be left in the boxes, and set out early in the spring in well manured and deep dug ground, setting the plants about one foot apart each way. Many persons defer the sowing of Pansy seed until spring, and of consequence fail to produce good flowers, as the hot sun of June and July will soon cause the flowers to dwindle to one half their former size.

A PUBLIC PARK FOR BALTIMORE.

BY HOWARD DANIELS, NEW YORK.

Now that our large cities are provided with Rural Cemeteries on a large scale, which excel in beauty, magnitude, and embellishment, any of their European prototypes, and which are peculiarly American institutions, created under the most liberal laws, providing in every conceivable manner for their protection and perpetuation, it is natural that the next great step in rural progress should be in providing public Gardens and Parks for the people. The growing interest in such rural places is becoming quite general in the older cities of the Union, and is the greatest move yet made towards providing the masses with healthful exercise and instructive recreation. With our mode of managing municipal affairs, it is to be expected that grave errors will often be committed; that abuses will creep in; and that the final results will often be far below what they would have been, had the right men been selected to design and direct the improvements.

At Baltimore, a project has been on foot for a year or two, which, so far, has been conceived and conducted in such a far-seeing, wise, disinterested, and business-like manner, and with results so entirely satisfactory, that I propose to furnish a brief account of the same for the benefit of the citizens of such cities and towns as may be meditating on the ways and means for providing themselves with a public park.

In an ordinance for providing a system of City Railways, the company was required to provide more and better accommodations for the public at five cents, than the omnibuses had for six cents; and to pay also to the city one cent for each passenger carried, for the purpose of creating a fund for a public park. It is estimated that this "park-cent" (as it is called) will average, during the fifteen years of the grant, not less than one hundred thousand dollars per annum, making the city passenger railways just that much more valuable to the city of Baltimore than the similar grants in New York, Philadelphia, and Boston.

Thus the introduction of the City Passenger Railway system, which was considered an adjunct to a park, has not only served to enlarge the views of

the Baltimoreans on that subject, but has actually furnished the means for its purchase and adornment, without resorting to direct taxation. For the purpose of carrying this project into effect, a commission, composed of five gentlemen, who were selected for their integrity, and taste in rural affairs, was created, and clothed with power by the city authorities, to select and purchase a suitable site, or sites, and lay out the same as a public park. The first act of this commission was, to advertise for sites containing not less than five hundred acres. Seventeen sites were offered, eight of which came up to the requirements of the advertisement, embracing several hundred pieces of land; the owners in each case combining to present a plat of the required area. Each site was examined with a view to its special adaptation to the purposes of a park, which embraced a topographical survey of the territory sufficiently accurate to enable them to estimate the cost of preparing it for the purposes required—its water and wood, its diversity of scenery, and capacity for cheap and easy improvement.

The result of these examinations was the selection of Druid Hill, the property of Lloyd N. Rogers, Esq., embracing about five hundred and seventeen acres, at a cost of four hundred and ninety-seven thousand three hundred dollars, and located within five minutes' walk of two of the City Railway lines. The site is beautifully diversified by gentle hills of varied forms, connected by flattened ridges into groups, or irregular ranges, forming grand foregrounds, and broken and intricate middle-grounds and distances; one large eminence near the centre of the park, and at the rear of the mansion, being three hundred and sixty-six feet above tide—a hundred and fifty-one feet higher than the Hampden Reservoir, and nearly three times the altitude of Vista Rock, in the New York Central Park, and by far the highest point of land in the vicinity of Baltimore. This hill is clothed with a fine growth of old forest trees, and forms the great central feature of the place; commanding, as it does, a series of magnificent views of the city, the bay beyond, down to Kent Island and Annapolis; while to the eastward and westward, there is a succession of inland scenes of great beauty and diversity of character.

The valleys being broad and gentle in their undulations, furnish admirable sites for parade-grounds, play-grounds, &c., producing great breadth of effect in the landscape. As a whole, the grounds are characterized by greatness, distinctness, and strongly-marked divisions, conspiring to grandeur, rather than easy transitions and delicate flowing lines.

The late owner allowed the buildings, fences, &c., to go to decay; and, excepting the great pear orchards, the meadow, pasture, and a few fields cultivated for personal convenience rather than profit, the place has been neglected and allowed to grow up without restraint. This, though very bad farming, has greatly enhanced its value for a park by the growth of trees and underwood in many places, especially along the fence rows. The general healthiness of the trees and freedom from mutilation, are unusual so near a large city, which probably may be attributed to the pride of the late proprietor in protecting and conserving the property bequeathed to him from his ancestors. These grounds, although neglected (agriculturally) for a long time, are not a barren waste, that has to be reclaimed, and planted, and cultivated half a century before shade enough is provided to entice people from their homes in hot weather; but are now furnished with a broad, irregular belt of original forest, nearly encircling the park, and breaking irregu-

larly into masses and groups over the central portions, which has been preserved and fostered with jealous care by the late owner and his ancestors for a century and a half. To the arboriculturist, these grounds are particularly interesting for the great number and variety of large, healthy, and *park like* trees, among which are to be found scores of magnificent old oaks from twelve to fifteen feet in circumference, that would do credit to Windsor Great Park or Fontainebleau ; sometimes standing singly, at others having marshalled around them generations of descendants, forming groves of families ; numbers of Hickories from eight to eleven feet in circumference, and from sixty to ninety feet in height ; also gigantic Tulip trees, of which no European park can boast, that loom up here and there twenty to thirty feet above their neighbors, giving variety to the sky-lines and spirit to the groups. These giants of the forest, when allowed room to spread and develop themselves, make admirable park trees, having a robust, masculine character peculiar to themselves.

Of the other trees that flourish, the more conspicuous are Maples, Elms, Planes, Walnuts, Ash, and quite a variety of second and third-class trees and shrubs, together forming a greater variety of the plants indigenous to North America than is usually found in the same compass.

Scattered over the grounds are groups of grand old trees, in rich clustering characters, with finely rounded and flowing outlines, combined with lower trees and bushes of various hues, blending the lines of the masses with the soil from which they spring ; sometimes projecting boldly forward, forming indentations and breaks of ever-varying shapes and dimensions, with broad, deep glades of turf or low bushes intervening, forming living pictures with magical effects of light and shade.

Frequently the lines are continued in the most irregular and picturesque manner by the fence-rows, which, from long neglect, have grown up with perfect freedom into irregular belts and screens, dividing the domain into scenes of varied character. The central portion, in the immediate vicinity of the mansion, is more open, probably from having been planted with short-lived trees, like the Catalpa, the Lombardy Poplar, &c., which, having reached maturity, have died. This portion will require new plantations, and, occupying the higher grounds, demands, and is capable of receiving, the maximum amount of arboricultural decoration, forming, with other appropriate improvements, the grand central feature of the place.

Broad meadows, bordered by irregular groups of trees connected by dense thickets of wild and tangled underwood, climbers and vines feathering to the ground, and spreading irregularly into masses, which luxuriate in the most *negligent abandon;* the central portions enlivened by majestic old *specimen trees*, or small groups, form scenes of great *breadth* and *dignity*, such as are to be found in the best English parks.

Persons alive to the charms of a landscape will find at every move or turn new scenes bursting upon the vision ; the eye is often led a wanton chase down the long vistas terminating in some deeply embayed recess of the skirting woodland, or across the broad meadows checkered by the shadows of shrubs and single trees; or, arrested by the gorgeous coloring of a group in an old fence-row, follows it by degrees through its intricate forms and coloring, till lost in the general hue of the distant wood.

The coloring, too, is agreeable and harmonious ; at times, sombre and retiring ; at others, rich, deep, and gorgeous enough to satisfy the most vivid

imagination, such as Hickories, Tulip-trees, Sassafras, Dogwoods, Maples, Tupelos, and Liquidambers only produce. These fine pictorial effects, the harmonious grouping and blending of color, are the results of time and nature left unrestrained to work up the rough outlines of the original proprietors. With such material in abundance, it will be seen that, with the aid of a landscape artist to open a vista here, fill out a group there, and plant out an offensive object in another direction, Baltimore may in a year or so have a park that will not be equalled in the world.

In short, the site embraces a fine surface for ornamental treatment, abounding in a variety of undulations, gentle, graceful, and grand ; finely wooded portions forming a dense exterior belt of primitive growth; groups and single trees diversifying the interior portions, and forming admirable park-like scenes ; fine springs of water to supply drinking fountains, and a small lake, and facilities for an abundant supply by artificial means for larger lakes and fountains at a trifling outlay ; all of which conspire to the making of a noble pleasure-ground in the shortest time, and with a comparatively small expenditure of money ; and if this project, so admirably commenced, is completed with improvements adapted to the wants and enjoyments of the public, conceived and executed in the spirit and genius of the place, the result will be a grand park, worthy of the Monumental City.

REVIEW OF THE GRAPE QUESTION.

BY A. S. FULLER.

Surely the people of the Quaker City are waking up in regard to the all-absorbing grape question. Besides giving us a score of articles in the several Horticultural journals, they have lately presented two small volumes, which we judge to be the crowning glory of the combined horticultural talent of that staid city.

"Bright on the Grape," is the title of the first of these productions. There seem to be four prominent features in this work : first, the author would impress the reader with the idea that he is offering a *new system* of grape-culture ; this is made apparent by the words "new system" and "*our system*," some fifteen times in the first six pages of the work ; second, that there is a special Fertilizer to be sold. Attention is called to this fact forty times in the body of the work, and a special notice on the last page ; "Price, $45 per ton." Third, that shallow planting is the great desideratum in grape culture, and the perfection of science, as applied to all horticultural pursuits. The fourth, and great feature, is originality, to which the author calls the special attention of the public, on page 10, where he claims to be the originator of the *detached and divided border for the vinery ;* "the alternate renewal plan has never before, we believe, been presented to the public, or practised in the vineyard, as a distinct and definite system, and may therefore be claimed as original."

We are informed, on page 6, in what this new system consists : "It is, in the main, a method of fruiting the vine on a single short cane with very short lateral branches, growing new wood from the main stem one year, and fruiting the next, dwarfing the vine by a definite rule of stopping and pruning, and renewing the entire wood of the vine (except a small portion of the main stem) every year."

Now, this appears all very well, excepting the loss of the crop every other year; for certainly, if a system of stopping and pruning is resorted to, a full crop can not be had every year. But when we read on page 8, we find an almost direct contradiction of the system of page 6. "The vine under this system is allowed to expend its whole strength, *wild rambling nature and all*, during one season, in the production of a new and perfect cane; the next season it is permitted to produce a full crop of fruit." Now, the question arises, what shall be considered a full crop of fruit? that we are not told, further than "all that the vine will perfect." But let us reflect a moment upon this point, and suppose we have a vine ten feet long and five-eighths of an inch in diameter, and a superficial surface of leaves exposed to the sun, that can elaborate a sufficient quantity of sap to produce a certain amount of fruit, varying somewhat according to the variety. The stem can carry nutriment only as the leaves call for it; and they can elaborate and prepare it as food only in proportion to the amount of surface exposed to the sun; therefore, a vine can not ripen but a certain amount, and do it well, giving us not only well-ripened grapes, but grapes containing the vinous and saccharine qualities in abundance, which can only be obtained by lessening the crop of any productive variety instead of endeavoring to increase it. The natural tendency of the vine, under cultivation, is to set more fruit than it is capable of perfecting, and to this fact we are indebted for the introduction of the various systems of pruning.

Let the system be what it will, says a celebrated writer, no vine can be allowed to bear but a certain amount of fruit with impunity, and when a vine has been once weakened by an excessive crop of fruit, it takes a long time, if ever, to restore it to its original vigor and health; this is so well known that it needs no further comment.

Various renewal systems have been given us from time to time; the long rod system of Hoare, and the short bow system of the Germans, and a host of others, each and all of which have succeeded, in certain localities, or certain varieties of vines, showing conclusively that one system and one kind of cultivation are not adapted to all countries and every variety of grape. The renewal system of Bright was in vogue in England, for vines under glass, in the beginning of the last century, as may be seen by consulting Miller's work, published 1731. He says, in speaking of wall culture of the vine, "These vines should not be forced every year, but with management they may be forced every other year, though it would be better if it were done only every third year; therefore, in order to have a full supply of fruit (*annually*), there should be a sufficient quantity of walling built, to contain as many vines as will be necessary for two or three years," &c. He then goes on to say, that we should grow the vine one year without fruit, to get a good strong cane, and the next year to fruit it; after which, cut it down, &c.

This plan has been put in practice by many since, but it has been found both expensive and troublesome, and at variance with the general character of the constitution of the vine. The only place where this system would be advantageous is, where vines are forced in pots, (where the roots are easily controlled,) and exhausted by fruiting; in such cases, if the vines were very scarce, it might be worth while to renew the vine from the same root, provided its vital energies were not too much exhausted.

Special Fertilizers.—Of the value of the special fertilizer mentioned, we

know nothing ; but, if we are to judge from experience, we shall be obliged to look upon it with distrust.

All the special manures have been lauded as wonderful, and almost miraculous in their effects, but none have stood the test of time so well as good barn-yard or slaughter-house manure, composted with muck, leaves, or old sods. That an equal quantity of these materials mixed together, and thoroughly rotted, before using, will produce healthy vines, and as perfect fruit as any other fertilizer, has been proved for ages. That other manures will produce a like result, if care is used in applying them, can not be denied. But we know that all concentrated manures need much care in their application, while, on the contrary, the simple compost may be used with impunity by the most unskilful gardener.

Shallow Planting.—*Very* shallow planting is urged by Mr. Bright, as of great importance in grape-culture, as well as in all other branches of horticulture. While we do not believe in *very deep* planting, we also look upon *very shallow* planting as a thing to be avoided in grape-culture as an evil, the consequences of which are more disastrous than that of very deep planting.

The advocates of shallow, or *surface* planting, as we must call it, say that, if the roots of the vine are allowed to penetrate the cold, wet subsoil, that it will languish, and the roots will decay, the vine become sickly, &c. In the first place, vines should never be planted upon soil that has a cold, wet subsoil, for in such cases they will fail, whether planted on the surface, and soil heaped over them, or a foot below. If soil is properly prepared, say at least two feet deep, there will be found to be little danger of the roots remaining too deep in the soil, even if they were placed there at first ; for it is well known to every one who has examined a grape-root, that the great tendency of the working roots is to the surface, and if they are allowed to take this position, and hold it, the lower roots having nothing to do, soon decay.

Now these surface roots are exposed to every change of weather ; if it is dry, they feel it first ; if a warm shower comes, and soon after great heat, the tender rootlets are exposed to such a degree of heat that they are scalded, the effect of which is soon seen by the shrinking of the fruit and drooping of the leaves. In cool climates this will not often take place ; but then, again, the roots, when very near the surface, are exposed to the cold, which often destroys them.

Keeping the working roots of the vine several inches below the surface, was considered in olden times a thing that *must be* accomplished ; and to effect this end, the operation of ablaqueating the vines was resorted to, which we find described in all the ancient works on agriculture. To be sure, they had a somewhat warmer and drier climate than we have ; and, again, they never thought of planting vines on ground that had not been thoroughly *pastinated* (pulverized) to the depth of from two to four feet. This operation of ablaqueation was the removing of the surface soil around the stock every autumn, and cutting off all the surface roots close to the main stem, to the depth of six to eighteen inches ; some writers recommending more, and others less—differing according to locality, soil, &c.—but all speak of its importance.

In this latitude no working root of the vine should be allowed to come within six inches of the surface, and at the south a still greater depth will be required for perfect security against the changes of the climate.

Our best and most experienced vine-growers at the present day under-

stand the importance of having a dry porous soil, and then compel the vine roots to work below, instead of on the surface.

We asked Mr. Schneike, of Cincinnati, (who is certainly authority on this question,) what was his object in trenching his ground three feet deep, and putting the surface soil at least two feet below the surface. His answer was, that he wanted the food for his vines below the surface, because he wanted the roots to work there, and not on the surface. Mulching is recommended by Mr. Bright, as a protection for the roots in surface planting. This will answer very well for vines or other plants the first season ; but to continue it for an indefinite period, and have it successful, is very doubtful, besides being very troublesome. It is making a safe harbor for all kinds of vermin; and further, the most that can be said of it is, that it is the most slovenly mode of cultivation in appearance that can be recommended.

Mr. Bright claims you, Mr. Editor, as well as Marshall P. Wilder and P. Barry, as favoring this system of surface planting ; but if either you or they have ever practised or commended the system, we have failed to discover it.

(To be continued.)

THE THOMERY SYSTEM APPLIED TO GRAPERIES.

BY JOHN EGAN, NEW BRIGHTON, S. I.

Some time ago, on looking over an old work on Fruits, called the "American Orchardist," by William Kenrick, I found therein a description of the management of the Grape-vine as practised at Thomery in France, a modification of which is, I think, peculiarly adapted for cold Graperies. This consists principally of planting the vines at a distance of about eight or ten feet from the front wall, according to the width of the house, in fact, as near the centre of the house as possible, and of each year laying down or burying a portion of the vine in its approach to its destined position at the front wall. By this means an extraordinary quantity of root is formed, and situated near the surface, which is a great object in the culture of the vine.

Many advantages are certain to follow from this mode of planting, and they are so apparent that I think it quite unnecessary to enumerate them.

Now I have a word to say against planting *at* the front wall, and will show its disadvantages. When planted so near the junction of the borders, the roots have a greater tendency to penetrate to the outside than to ramify through that rich bed prepared for them inside ; and if any person doubts this assertion, I only ask him to examine his inside border, and if he finds a great quantity of roots there, he is one of the lucky ones. It is a well-known fact that the roots of vines can be brought and kept near the surface by mulching, but its appearance is unsightly, and considered to be favorable to mildew, if on the inside. This being the case, the other mode will be adopted in preference. Again, much time and labor are lost in the application of moisture, as well as expense in the use of fertilizing substances, which do not come in contact with roots. Notwithstanding all this, I am not an advocate for inside borders only, but I think that the inside border is of most importance : by the time it is well matted with roots, there are sufficient to extend outside.

EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, &c., intended for the perusal of the Editor, and packages by Express, should be directed to the care of C. M. Saxton, 25 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."

OUR "*Chapter of Visits*," and some other things of our own, have been omitted this month, in order to make room for our correspondents, some of whom, however, must still have patience.

THE PHONOPHORUS.—It is known to many of our readers that we have the inexpressible misfortune to be deaf; anything, therefore, which makes more possible to us some of the enjoyments of social intercourse we are inclined to regard with peculiar favor. We have tried all manner of helps to hearing, and with more or less satisfaction, but the Phonophorus, or sound conductor, is infinitely superior to them all. One has been placed in Dr. Dunbar's church, in New York, and we went up there to try it. Mr. Pardee, who was with us, read from the pulpit, and we heard distinctly every word he uttered. We have one in a basket form in our room, and conversation has become comparatively easy and pleasant. We mention the subject here that any of our readers who may be afflicted with deafness may avail themselves of its benefits. It was invented by Mr. David D. Stelle, of New Brunswick, N. J.

ISABELLA WINE, &c.—We are indebted to Mr. Hite for samples of Isabella and Elderberry wines. The latter is made in imitation of claret, but is very "stout," and not intended for children. The Isabella is a good wine, and does credit to Mr. Hite's skill.

THE ROSE RADISH.—The editor of the *Rural New Yorker*, in copying our article on this Radish, remarks that our engraving is not a good one, as he has grown it; and in this he is no doubt right, for we have seen it very much as he figures it, grown from seeds purchased at the stores, and we think it has degenerated. Some of our frontispieces have been open to criticism, but this is not true of our portrait of the Rose Radish; we assure our *Rural* friend that this is a very accurate and fair representation of the Radish as we grew it from the original seed, except that in the colored edition the color should be brighter. The *Rural* agrees with us in regard to its excellence.

THE BARTLETT STRAWBERRY.—We had intended to give this fine fruit as a frontispiece to our September number; but the plate not having been done to our satisfaction, we returned it to the engraver, who failed to get it ready in time. It will appear in October, with our description.

CATARACT WASHING MACHINE.—This is another labor-saving machine which we can confidently recommend to our country cousins It is cheap, durable, and efficient, and will contribute largely to lessen the drudgery of washing.

THE ROSE SLUG.—A correspondent writes: "If you will publish something that will save my *roses* from the deliberate slaughter of these murderous pests, which have nearly destroyed my large and choice varieties of *beauties*, I shall deem the information cheaply purchased by paying for half a dozen copies. Tobacco, and smoke, and sulphur, and lime, and plaster, and *woman's tears*, and men's imprecations, are alike harmless to exorcise those miscreants which 'plague mankind.'" A hard case, certainly. We have heard of all these remedies before, except "woman's tears." Where *they* fail, the case is almost hopeless; but you might nevertheless try a mixture of whale-oil soap and lime; and if you wet the foliage *thoroughly*, and repeat the dose two or three times, you can hardly fail to succeed. You might also try the "Gishurst Compound."

THE DROUGHT.—Mr. Philips, writing from Edwards' Dépôt, Miss., says:

"Have not had rain on centre of plantation enough to wet bottom of furrow since 22d April. Ther. has stood at 105 deg. in my piazza, and generally at 98 to over 100 deg. Never thus before. The thermometer is not correct by four degrees, yet is the same, and on same nail for years. I have three others, all show same degree in comparison of elevation. My plantation extends from river bank (Big Black) to creek bank, (14 miles—Baker's Creek on maps,) my house about midway of plantation. While we have pretty good showers on the river—again on the creek—none here for good. Health of country good."

WE shall hereafter devote a portion of our time to outside business, such as laying out and improving grounds, vineyards, orchards, &c., the construction of greenhouses, graperies, etc., and preparing plans. We can also be consulted in reference to the selection of grape-vines, trees, shrubs, etc., at a moderate charge.

BROOKLYN HORTICULTURAL SOCIETY.—The Fall Exhibition of this Society will be held at the Athenæum, Brooklyn, on the 19th, 20th, and 21st of September. A fine display is anticipated, which we hope may be fully realized.

DUNN'S MARKING PENCIL.—Messrs. Thorburn & Co. inform us that they have ordered this pencil, and we are glad to hear it. Something of the kind has long been needed, and we hope it may prove what it has been represented.

GRAPE ROT.—This dreaded disease has made its appearance here, being confined, so far as we have observed, to the Catawba and Isabella, but mostly to the former. We know of no remedy, but think it advisable to cut out the diseased berries, which sometimes serves as a check.

READING ROAD NURSERY.—It will be perceived, by our advertising columns, that Mr. Heaver proposes to sell out, this fall, at auction. This will present a good opportunity for those in search of nursery stock.

OSCAR STRAWBERRY.—This is a new and very promising Strawberry, specimens of which were sent us by Mr. Hite, and subsequently, August 2d, by Mr. Linsley. It is a large, firm-fleshed, and highly flavored berry, and has a prolonged season. We desire to see more of it, however, before giving it a place.

GAS REFUSE.—Being curious in such matters, we recently examined, in operation, Coon's Portable Gas Generator, which we found to be the neatest and best thing of the kind we have yet seen. The gas being generated partly from animal matter, it occurred to us that the refuse might be of some value as a fertilizer; and this, on trial, proved to be so, though to what extent we can not yet say. Those who use this gas generator would do well to experiment with the refuse, instead of throwing it away.

A NEW PEST.—A. P. Cumings, Esq., has just shown us some grape-vine leaves, very much injured by an insect which we do not remember to have seen before. At first we supposed it to be an immature thrip, but a closer scrutiny disclosed a wingless insect of a very different character. We have kept them for further study.

THE NEW ENGLANDER.—The August number of this able quarterly has been received. Contents: 1. A Hymn and its Author—Augustus L. Hillhouse—by Dr. Bacon. 2. Reflex Benefits of the Clerical Office—a Letter from a Country Clergyman to his depending Brethren, by Rev. Andrew C. Denison. 3. The New Planets, by Prof. Daniel Kirkwood. 4. The Baptists in Connecticut, by Rev. Robert C. Learned. 5. The Fine Arts: their proper Sphere, and the Sources of excellence therein, by George McClelland. 6. The Congregational Polity and a Biblical Theology, by Rev. J. P. Thompson. 7. Constitutional History of Athenian Democracy, by Prof. W. A. Larned. 8. Original Sin: the State of the Question, by Prof. Geo. P. Fisher. 9. A Half Century of Foreign Missions, by Rev. Leonard Bacon, D. D. 10. The Princeton Review on Dr. Taylor and the Edwardean Theology. 11. Discourse Commemorative of Charles Goodyear, the Inventor, by Rev. S. W. S. Dutton, D. D. 12. Notices of Books.

ATLANTIC MONTHLY.—The August number is a good one, though not quite as well sustained as usual. The following are its contents: The Carnival of the Romantic—a Legend of Maryland—Prince Adeb—Eleusinia—Victor and Jacqueline—Midsummer—Tobacco—Shakespeare done into French—The Poet's Longing—A Journey in Sicily—The Professor's Story—Anno Domini 1860—Darwin on the Origin of Species—Reviews and Literary Notices—Recent American Publications.

CATALOGUES AND BOOKS RECEIVED.

Descriptive Catalogue of Vines, etc., with Explanatory Remarks and Indications for Cultivation. By C. W. Grant. Post Office address, Iona, near Peekskill, Westchester Co., N. Y.—This is a new, enlarged, and much improved edition, containing a great deal of valuable information, besides its descriptive matter.

Meehan's Wholesale List of Dutch Flower Roots, for the Fall of 1860. T. Meehan, Wissahicken and Germantown Nurseries, Germantown, Pa.—We would caution our readers against buying auction bulbs, while they can get the leading kinds, under name, at the moderate prices named in this catalogue.

Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, Vines, Roses, Evergreens, Bulbous Roots, Greenhouse and Hedge Plants, &c., cultivated and for sale at the Fruitland Nurseries, Augusta, Ga., by P. J. Berckmans.—This is intended more especially to meet the wants of the South, but selections can be made for any section.

Descriptive Catalogue of Hardy Ornamental Trees, Shrubs, Roses, etc., cultivated and for sale at the Mount Hope Nurseries, Rochester, New York. Ellwanger & Barry, Proprietors.—A neat and well-arranged catalogue, including all the more recent novelties worth growing.

Supplementary Catalogue of Grape-Vines, Clematis, &c. Cherry Hill Nurseries, West Chester, Pa. Hoopes & Brother, Proprietors.

Descriptive Catalogue of Fruits cultivated and for sale at the Toledo Nurseries, by A. Fahnestock & Sons, Toledo, Ohio.

Descriptive Catalogue of Ornamental Trees, Shrubs, Roses, Vines, Plants, &c., cultivated by A. Fahnestock & Sons, Toledo, Ohio.

Central Nurseries, York, Pa. Edward J. Evans & Co.'s Trade Catalogue of Fruit and Ornamental Trees, Shrubs, Roses, Bedding Plants, &c., for Autumn, 1860, and Spring, 1861.

Wholesale Catalogue of the Cherry Hill Nurseries, West Chester, Pa. Hoopes & Brother, Proprietors.

Chester County (Pa.) Agricultural Exhibition, to be held in the Borough of West Chester, on Friday and Saturday, Oct. 5th and 6th, 1860.

Monthly Record of the Rensselaer County Agricultural and Manufacturer's Society. Published by the Society. August, 1860.

Report of the Commissioners appointed by the Governor of Ohio, to Investigate the Massachusetts Cattle Disease, Pleuro-Pneumonia.—We are indebted to Mr. Klippart for this interesting Report, which contains about all that is known of this dreaded and fatal disease.

Science, the true Basis of Education.—An interesting and suggestive Address, by Charles Arthur Ely, delivered before the Board of Trustees of the College of California, at its first Commencement at Oatland, on the 14th of June, 1860.

The Fruit-Preserver's Manual. By S. Culver.

The Phonographic Journal. Conducted by Elias Longley, Cincinnati.—This is in phonographic characters.

All the Year Round.—The September number well sustains the character of this sterling serial.

Outlines of Chemico-Hygiene and Medicine ; or, The Application of Chemical Results to the Preservation of Health and Cure of Disease. By A. Dallas, C. H., C. M. Toronto, Maclear & Co., 1860.

The Illinois Teacher: devoted to Education, Science, and Free Schools. August, 1860.

Correspondence.

PETER B. MEAD, ESQ. :—*Sir:* In an article on inside detached and divided vine-borders, published in the May number of the HORTICULTURIST, Mr. Bright states that "neither the 'Book of the Garden,' by Mackintosh, nor any other English work or journal, has, to my knowledge, described or suggested inside divided vine-borders." Now you will find that Hoare, in his work on the vine, republished in New York in 1847, strongly insists on the border being entirely *inside* the house, and, on page 79, says: "Carry the walls up *hollow* as high as the adjacent soil;" and, on page 180, across the inside border build "solid walls, for the purpose of keeping the roots of the vines separate from each other," same as Mr. Bright. Again, in Loudon's "Suburban Horticulturist," ed. 1842, there is a section of a vinery with *inside* border raised above the ground level; and in Johnson's "Gardener," ed. 1853, vol. iii., page 80, there is a section of a vinery with inside border, in which the Rev. B. Cooper for many years raised an abundant and an early crop of grapes. Yours truly,

Hoboken, July 7, 1860. DR. D. BENSON.

[Mr. Bright has already conceded the point of originality in regard to inside borders; and it is quite possible for him to have made an inside border without having seen the works of Hoare and Johnson. It is probable that Mr. Bright may have something further to say on the subject.—ED.]

P. B. MEAD, ESQ. :—*Dear Sir:* In answer to your inquiries touching the mildew upon the gooseberry, I would first state, that about eight years since I purchased three dozen of the best named English varieties—say, Melling's Crown Bob, Framer's Roaring Lion, Caper's Top Sawyer, Dixon's Golden Yellow, Wainman's Ocean, Whitesmith, Ironmonger, and others of equal celebrity at that time—and planted them in the best localities in my garden. For five years they grew beautifully, always heavily laden with blossoms; but when the fruit grew to

the size of a pea it commenced mildewing, and during the period of five years I could not get one ripe berry, as they would burst and fall prematurely to the ground. I tried every remedy that could be suggested, but my efforts proved "fruitless." I had planted a cherry currant-bush in close proximity to one bush, and it mildewed the currants, as well as also the leaves of it. Such were the alarming effects of the pest, that I determined to dig them up and "throw them to the dogs," when a lady of Westchester county (whose name I am not at liberty to mention at this time, neither am I privileged to state the process, which costs nothing but a little labor) begged permission to try an experiment on my bushes—which was about three years since—and the result is, that during all that time my bushes have been laden with most delicious fruit, each coming up to its name.

As the lady in question is extremely modest in her aspirations, she has been unwilling to place her discovery at the disposal of the public until she was *thoroughly* convinced of its efficacy. I think, as far as my judgment extends, we have sufficient test to pronounce it a perfect specific for the mildew upon the gooseberry. Since the reception of your note, I have gained her consent to request the proprietors of the HORTICULTURIST to appoint a committee to visit my garden and examine for themselves, and report accordingly. The berries at present are almost full grown, and promise as well as former crops, and when ripe I shall take great pleasure in presenting specimens to you of each variety: at the same time, if I am released from the injunction of secresy, to impart the process, to be laid before the public through the columns of the HORTICULTURIST.

Morrisania, June 27th, 1860. GEO. H. HITE.

[Having heard much talk of Mr. Hite's gooseberries, and their freedom from mildew, we wrote to him, asking for information, in response to which we received the above. We have visited his garden, and found his gooseberries to be just as represented, free from all signs of mildew, and in other respects very fine. We did not learn how the result was effected, but the subject will go into the hands of a committee for examination and report. If there is anything in it, we do not believe it is for the interest of any of the parties to keep it a secret; and if it is anything that ought to be paid for, we are willing to pay for it. Let us first know what it is.—ED.]

EDITOR OF THE HORTICULTURIST:—*Sir:* In reference to the remarks on *Lilium Philadelphicum*, in this month's HORTICULTURIST, permit me to state that my bulbs of the same, when fully grown, produce from 17 to above 20 blossoms; but, last fall, I added to a cube of about 18 inches of good garden soil a gallon or more of crushed charcoal, and planted therein three fine bulbs of L. Philadelphicum; one of these bore 48 blossoms, another about the same number, and the third 54. They made a magnificent group for a considerable time, as the blossoms were successively developed.

I use charcoal with much advantage to plants in general. It gives brilliancy to my tulips, and increases the size and number of bulbs and blossoms. I have frequently five blossoms from one bulb, and two and three blossoms from one bulb is very common.

New Harmony, Ind., August 7th, 1860. MARGARET CHAPPELLSMITH.

[Your lilies must have been a beautiful sight. We have heretofore strongly recommended the use of pulverized charcoal, and do so again; for pot-plants it has a special value.—ED.]

EDITOR HORTICULTURIST, NEW YORK:—*Dear Sir:* I notice, at page 377 of your last number, that reference is made, by "A Buffalonian," to the report circulated last autumn, and then inserted by you and others, that "Delaware grapes had been found in three different locations in a wild state." Your Buffalo friend does not appear to be posted as to the latest intelligence on the subject. If he will refer to the columns of the HORTICULTURIST, and to the "Germantown Telegraph," where the *canard* first started, or to any member of the Pennsylvania Wine-Growers' Association, of which Dr. J. B. Garber is a distinguished member, he

will find that a thorough investigation of the matter took place, ending in a complete refutation of the silly fabrication, and in proving positively that not one Delaware vine existed but what was traceable to the vineyard of foreign vines imported by Judge Prevost, of Frenchtown, N. J. I visited the town of Delaware, Ohio, last September, and, to my great surprise, I found but one Delaware vine in bearing, and that was trained against the south side of Mr. Campbell's stone house, and was so sheltered that any of the Chasselas grapes would mature their fruit in the same position. The evidence of its origin, and the character of the plant itself, are so conclusive as to its foreign character, that I did not suppose any man of careful observation could entertain a present doubt on the subject. I well knew, when I first presented my views, that *self-interest* would be startled when the public has been so egregiously misled; but I also knew that one year's observations would confirm the truth of my position. I long since prepared an article specifying the distinct characteristics of the foreign species, *Vitis vinifera*, when contrasted with our indigenous species; whereby it is proven that, while the Delaware *has all the attributes of the foreign species, it does not possess one solitary attribute of our native species.* I have also been gathering other facts and evidence, but have deferred their publication, awaiting the general opportunity for investigation which another fruiting season would afford to the public at large. Yours respectfully,

Flushing, August 13th, 1860. WM. R. PRINCE.

[The above was received after Mr. Garber's article was in type. It is too bad to place "A Buffalonian" between two fires, but we suppose he can stand it. When Mr. Prince gets all his facts and evidence together, we shall be glad to have them. Meantime, we shall give the subject further investigation.—ED.]

GISHURST COMPOUND.—ED. HORT. :—*Dear Sir:* Allow me to say a few words in reference to this invaluable compound. I find it up to the mark with everything I have tried it upon. I have no mealy-bug, so can't say whether it will kill that or not. Allow me to suggest the necessity, and also the propriety—for instance, in a house of vines, or any other plants affected either with red spider, mildew, &c.—to first thoroughly syringe the house through with water, so that the whole of the foliage gets thoroughly wetted; when this is completed, then take the prescribed *quantum sufficit*, and syringe away. You will save just one half by this process, because, the foliage being already wet, the compound runs freely all over every portion of the leaves.

GARDENERS, *please take a note of this*, and if Mr. Elliott, of 31 John street, who sells this "*Gishurst Compound*," will tell his purchasers to *syringe first*, and *compound* afterwards, they won't cry out much about the price, for the hint will pocket them just fifty per cent.

FOX MEADOW.

[Thus far our correspondence, as well as our experience, has been in favor of this compound, and we believe it to be a really valuable preparation. If any have tried it without good results, we should be glad to hear from them too. Our object is to get at its real merits.—ED.]

GISHURST'S COMPOUND.—It is to be supposed that every one who has tried the "Compound" will report his success till the Editor of the HORTICULTURIST will say, "It's enough," as Dr. Lindley did, in the "Gardener's Chronicle," on the same subject. I have tried it, too, for the aphis on roses, and have found it effectual. I turned the small plants upside down, and dipped them in the solution, (two ounces to a gallon;) the bugs were immediately paralyzed, and turned black within twenty-four hours. Syringing can hardly be as effectual, besides being very expensive, as there is much waste, and the price certainly awful. Our friends across the Atlantic must appreciate an exterminator for the vermin, else they would not venture to ask such a price. I have also tried the Pyrethron (insect powder), but with no satisfaction.

CUCUMBER RAISING.—Last spring my cucumbers in hotbeds were attacked by some vermin

of the centipede tribe, which destroyed a great many vines. They were in the main stalk, immediately above and below the surface of the ground, and went down to the very extreme points of the roots. Who knows a remedy? A series of articles on the forcing of vegetables in hotbeds, from some experienced suburban market-gardener, would be desirable, at least by

Fort Wayne, Ind., July 21, 1860. Your humble servant, M.

[More testimony in favor of the Gishurst Compound, and nearly enough, we think, to place it entirely outside the list of "humbugs." The price, we are glad to know, has been materially reduced, and this is necessary to bring it into general use. We suppose your "centipede" to be the "squash borer," and it is difficult to destroy. The mischief is done before you are made aware of it. The only remedy we know is to place some offensive substance around the vines when they are young. This we have done with varying success, using tar, gas lime, sulphur, &c.; diluted gas lime seemed to give the best results. You have the Gishurst Compound, and might try that. The series of articles you allude to are much needed, and we have made provision for them.—ED.]

MR. EDITOR: Some insects are eating my Exotic Grapes. It is done in the night-time, and I have failed to detect them. They commence usually on the top of the bunch, with a small puncture. They began with my early crop in the forcing-house, and now have commenced in the cold vinery, which is ripening. A neighbor says, crickets, as they work in the night. I can find nothing in Loudon, nor in the Grape Books, about it. Can you tell me what it is, and give me a remedy? Truly yours, F. W.

Newark, N. J.

[We can not imagine, from your description, what the insect is. Can you not send us a specimen? It may be a beetle, but it is not the cricket.—ED.]

HORTICULTURAL SOCIETIES, ETC.

KENTUCKY HORTICULTURAL SOCIETY.—We are indebted to Thomas S. Kennedy, Esq., the energetic President of this Society, for an account of the last three *weekly* exhibitions, which we are compelled to condense more than we should if we could get them "one at a time." We ask the members of societies about New York to note the fact, that these are *weekly* exhibitions, and then ask themselves if they are doing their duty, either to themselves or the public. We wish the members of the Kentucky Society, and all others like them, the success they deserve. The proceedings and exhibitions of remote societies, aside from their own interest, afford our readers the means of judging of the local value of particular kinds of fruits, and their time of ripening in various parts of the country; and this, of itself, gives them a general interest.

The following articles were exhibited on Saturday, July 14th:

Carey, Peter, & Carey exhibited Jargonelle, Dearborn's Seedling, Osband's Summer, and Harvard Pears; Red Astrachan and Early Harvest Apples; with Apples for a name.

Jacob Johnston exhibited Early Harvest, Early Joe, Gravenstein, and *Carolina* Red June Apples.

Dr. J. C. Johnston exhibited a French Apple of fine size and tempting appearance, unknown in this locality.

James Stevens exhibited Summer Queen Apples, Germantown and Dearborn's Seedling Pears, Imperial Gage Plums, and two plates of Plums for a name.

Lawrence Young exhibited Pears and Plums for a name.

Thomas S. Kennedy exhibited *Herr's Striped* June Apples.

W. H. Duncan exhibited Duane's Purple Plums.

H. S. Duncan exhibited Early Tillotson Peaches, Osband's Summer and Bloodgood Pears, Early *Smith's Orleans* Plums, Philadelphia Queen, Sweet Bough, and Carolina Red June Apples.

Wm. Heaver, of Cincinnati, exhibited ten varieties of Apples, viz: Early Joe, Duchess of Oldenburg, Early Bough, Early Strawberry, Summer Rose, Red Astrachan, Early Harvest, William's Favorite, (two samples, one grown on dwarf trees, and one variety not named.)

Wm. Daitrick, of Indiana, Hoosier Red Apple, Transcendent Crab, and Apples for a name.

Bissell & Salter, of New York, exhibited a beautiful specimen of German White Muscat Grapes.

Joseph Ashton, of Indiana, exhibited Dearborn's Seedling and Jargonelle Pears, and Pears for a name.

Flowers graced the tables in a few bouquets—one of which, exhibited by Henry Nanz, was exceedingly beautiful.

On Saturday, July 21, another exhibition was held, from which we gather the following:

The largest display was with Pears, of which nine exhibiters had the following varieties, named in the order of their merit and quality, according to the specimens on the tables: Osband's Summer, Tyson, Bloodgood, Dearborn's Seedling, Harvard, Jargonelle, Doyenné d'Eté, Lawrence's Summer, (not quite ripe,) and Bartlett, (premature.)

There were ten kinds of Peaches exhibited by five different growers, viz: Early York, July Seedling, Very's Seedling, Early Crawford, Early Tillotson, Cole's Early Red, Yellow Alberge, Yellow Rareripe, and Hill's Superb Jersey. The Superb Jersey was the most splendid exhibited.

In spite of the *curculio*, there was a very fine display of Plums. Six growers exhibited no less than ten different kinds of Plums, nearly all of which were perfect, although traces of lime on the fruit gave evidence of the watchful care that had been necessary to save them from destruction. The kinds were: Red Gage, Imperial Gage, Smith's Orleans, Bradshaw's Columbia, Lombard, McLaughlin, Duane's Purple, a red seedling from Indiana, Seedling Apricots, and several kinds of Chickasaw Plums, of which a very large red variety from Tennessee was regarded by the Society as worthy of special attention and careful cultivation.

There were nine kinds of Apples exhibited, some of which were of the very best quality, and worthy of more extended culture. The varieties were: Carolina Red June, Summer Queen, Gravenstein, Black's Annette, Red Striped June, Indiana Seedling, Summer Hagloe, Keswick Codling, and an apple which was planted for the Summer Queen, but it proves to be superior to that variety in several respects, and, for the want of the true name, which is unknown, it has been called, for several years past, Cary's Favorite.

On Saturday, July 28th, the following fruits were on the tables:

Peaches, 9 exhibiters.—Early York, (very fine,) Early Tillotson, Crawford's Early, (large,) Birkenmayer's July, Longworth's July, Hill's Superb Jersey, (monstrous,) Cooledge's Favorite, Grosse Mignonne, Vanzant's Superb, Yellow Alberge, Red Rareripe, Teton de Venus, and two unnamed Seedlings.

Apples, 8 exhibiters.—Keswick Codling, (worthless,) Summer Hagloe, Early Harvest, Carnation, Alexander, (immense size,) Finley, (a splendid local fruit,) Summer Queen, Summer Pearmain, Gravenstein, Shaker's Summer, (local, very superior,) Transcendent Crab, and four unknown varieties.

Pears, 7 exhibiters.—Tyson, (delicious,) Flemish Beauty, Rostiezer, (not ripe,) Bartlett, White Doyenné, St. Ghislain, Doyenné d'Eté, Green Beurré.

Plums, 15 exhibiters.—Washington, Imperial Gage, Red Gage, Yellow Gage, Yellow Egg, Columbia, Duane's Purple, Bradshaw, McLaughlin, Reine Claude, Lombard, Smith's Orleans, and four varieties unknown.

Grapes.—Black Hamburgh and Victoria Hamburgh, from Messrs. C. P. Bissell & Salter, of Rochester, N. Y.

Mr. Kennedy informs us: "The fruits exhibited at the weekly shows are sold at auction, at 11 o'clock, unless otherwise desired by the exhibiter, who has the privilege of withdrawing his

contribution after the sale. No entrance or admittance fees are charged. The expenses of the exhibitions are paid by the retaining of twenty-five per cent. of the gross sales by the Society; the balance of the sales is paid in cash to the owners of the fruits and *bouquets*, of which the florists in the vicinity always furnish a very fine collection. The prices generally obtained at these sales are quite satisfactory to the contributors. In the sale of the fruit on the foregoing list, one plateful, containing about eight or nine peaches, (Hill's Superb Jersey,) sold for $7 50. Other kinds of peaches sold for prices ranging from one dollar to three dollars per dozen.

GENESEE VALLEY HORTICULTURAL SOCIETY.—This Society held an exhibition in Rochester on Friday, June 22d. We are indebted to the Secretary, Mr. C. W. Seelye, for an account of it, which we have been compelled to condense as follows:

The display of fruits and flowers was pronounced the most magnificent ever made here at this season of the year. Large collections of Roses were presented by Messrs. Ellwanger & Barry, A. Frost & Co., J. Donnellan & Co., and C. W. Seelye.

Fine specimens of plants in pots were exhibited by S. Mathews, Esq., and Ellwanger & Barry.

Messrs. Ellwanger & Barry, Hooker, Farley, & Co., H. E. Hooker & Co., C. W. Seelye, and A. Frost & Co., presented extensive collections of Strawberries.

Ellwanger & Barry and A. Frost & Co. made most magnificent displays of Cut Flowers of Herbaceous Plants.

Besides the above, were a great number of interesting but smaller entries.

A large quantitity of bouquets were in competition, and well-grown specimens of Grapes in pots were presented by S. Mathews and A. Frost & Co.

Mr. W. H. H. Barton presented a dozen bottles of his *Isabella* wine, which he has branded *Port Genesee*, and for which he has already acquired quite a reputation.

The prize offered for the best six pot plants was awarded to S. Mathews, Esq. Among them were beautiful plants of *Clerodendron fragrans*, *Stephanotis floribunda*, *Ixora grandiflora*, and *Begonia rex*.

Table Bouquets.—The 1st prize was awarded to A. Frost & Co.; 2d, to C. W. Seelye.

Hand Bouquets.—1st prize to A. Frost & Co.; 2d, Ellwanger & Barry.

Hand Bouquets made from flowers grown in open ground.—The prize for these was awarded to C. J. Mills & Co.

Hanging Baskets.—1st prize, Mrs. Dr. Ripley; 2d, C. J. Ryan & Co.

Herbaceous Plants.—Best collection, Ellwanger & Barry; 2d best collection, A. Frost & Co.

Roses.—Best collection, Ellwanger & Barry; 2d best collection, A. Frost & Co. Best 25 varieties, Ellwanger & Barry. Best 12 varieties, A. Frost & Co. Best 6 Moss, A. Frost & Co.

Strawberries.—Best collection, Ellwanger & Barry; 2d best, Hooker, Farley, & Co. Best 6 varieties, Ellwanger & Barry, for Wilson's Albany, Trollope's Victoria, Triomphe de Gand, Scott's Seedling, Brighton Pine, and Genesee. Best dish of Strawberries, H. E. Hooker & Co., for Triomphe de Gand.

Cherries.—Best collection, Ellwanger & Barry; 2d best, A. Frost & Co. Best quart of Cherries, A. Frost & Co., for Coe's Transparent.

Exotic Grapes.—Best three bunches, S. Mathews, for Black Hamburgh. Best specimen exotic Grapes in pots, S. Mathews.

Beets.—Best six, Geo. Cooper.

Lettuce.—Best six heads, C. F. Crossman.

Radishes.—Best three bunches, Geo. Cooper.

Cucumbers.—Best three specimens, Thos. McGill.

Onions.—Best three bunches, Geo. Cooper.

In the evening, the Hall was thronged with visitors until a late hour; and good music, luscious ripe strawberries and ice-cream, did not have the effect of rapidly dissipating the crowd.

ST. PAUL HORTICULTURAL SOCIETY.—This young Society recently held its first public exhibition at St. Paul, and they seem to have had a good time. The secretary, Mr. Hewson, sends us the following account of it:

The Horticultural Exhibition was far more extensive and beautiful than could be expected, and gave rich promise of the future. Strangers and citizens were aqually surprised and delighted at the magnificence of the floral display, as well as the fine specimens of our fruits and vegetables.

The Balsams, Delphiniums, Fuchsias, Pelargoniums, Geraniums, Petunias, Phloxes, Pinks, Pansies, and Verbenas were much admired. The exhibition of Cut Flowers, Greenhouse Plants, Wild Flowers, and Roses was also very fine.

The strawberries exhibited by W. H. Jarvis, M. D. Clark, and Dr. A. E. Ames, of the Wilson's Albany, McAvoy, and Hovey's Seedling, were too tempting and luscious to remain untasted during the day. We have often seen larger specimens, but none of more exquisite flavor. The red, white, and black currants exhibited by Alx. Buchanan, T. M. Smith, and W. H. Jarvis, respectively, were excellent; the gooseberries, by W. H. Jarvis and J. W. Selby, were the largest we ever saw. There were also fine specimens of red and black raspberries, by Mrs. H. L. Moss. Mr. P. W. Nichols exhibited a limb thickly hung with Siberian Crab Apples.

In vegetables, the rhubarb exhibited by Mr. M. D. Clark had the largest stalks, and took the first premium. The specimens by M. H. Jarvis, J. W. Selby, and T. M. Smith, were not far behind, and so nearly equal, that the Committee could not agree as to which was entitled to the second premium. The cucumbers by Mr. Clark and Mr. Mitchell (gardener for Judge Nelson) took the first and second premiums. Mrs. C. W. Borup took the first premium on tomatoes. There was also an excellent show of lettuce, radishes, cabbages, "kohl rabi," peas, beets, cauliflowers, carrots, turnips, beans, onions, corn, &c.

The following is a list of the premiums awarded:

Balsams.—Mrs. Daniel Rohrer, best display, $1.50.

Delphiniums, Perennial.—L. M. Ford & Co., best three varieties, $1.

Fuchsias.—Dr. A. E. Ames, best three grown plants in bloom, $1. L. M. Ford, second best, 50c. Dr. A. E. Ames, best three varieties in bloom, $1. L. M. Ford & Co., second best three, 50c.

Pelargoniums.—Mrs. C. W. Borup, best three grown plants in bloom, $1. Dr. A. E. Ames, second best, 50c. Dr. A. E. Ames, best three varieties, $1.

Geraniums.—Mrs. C. W. Borup, best three varieties in pots, $1. Dr. A. E. Ames, second best, 50c. Mrs. C. W. Borup, best grown specimen, $1. Dr. A. E. Ames, second best, 50c.

Petunias.—Mr. John S. Prince, best three named varieties, $1. L. M. Ford & Co., best named specimen plant, $1. A. Buchanan, best seedling raised by exhibiter, $1. D. C. Greenleaf, 2d, 50c. A. Buchanan, best three, $1. D. C. Greenleaf, second best, 50c. A. Buchanan, best display, $1. D. C. Greenleaf, second, 50c.

Phloxes.—D. C. Greenleaf, best three varieties perennial, $1.

Pinks.—Mrs. C. W. Borup, best three varieties florist's pinks, $1. A. Buchanan, second best, 50c. L. M. Ford & Co., best display, $1. D. C. Greenleaf, second best, 50c.

Pansies.—Dr. A. E. Ames, best three seedlings, $1. Mrs. J. W. Shelby, second best, 50c. D. C. Greenleaf, best display, $1. Mrs. C. W. Borup, second display, 50c.

Verbenas.—Mr. John S. Prince, best six named varieties, $1. D. C. Greenleaf, best display 25 varieties, $1.

Greenhouse Plants.—Mrs. C. W. Borup, best three specimens greenhouse plants in pots, $1.

L. M. Ford & Co., best and largest display of greenhouse plants, one of a variety, $5. Dr A. E. Ames, second best, $3.

Cut Flowers.—D. C. Greenleaf, best display, 59 varieties. $1. Mrs. John S. Prince, second best, 50c. Dr. A. E. Ames, best vase bouquet cultivated flowers, $1. L. M. Ford & Co., second best, 50c. L. M. Ford & Co., best hand bouquet, $1. D. C. Greenleaf, second best, 50c. Mrs. J. W. Selby, best basket, $1. L. M. Ford & Co., second best, 50c. Mrs. C. W. Borup, best display cut dahlias, $1. Mrs. John S. Prince, second best, 50c. Capt. N. J. T. Dana, best display Canterbury Bells, $1. L. M. Ford & Co., best mammoth bouquet of Sweet Williams, $1. Wm. Hansen, best mammoth pyramid of cut flowers, $1.

Wild Flowers.—Mrs. M. D. Clark, best basket cut flowers, $1. A. Schmedlin, best vase bouquet, $1. Miss Ellen Hawke, best hand bouquet, $1. D. C. Greenleaf, best display, $1.

Roses.—Dr. A. E. Ames, best three varieties in pots, $1. D. C. Greenleaf, best 10 varieties cut roses, $1.

Ornamental Design.—L. M. Ford & Co., best ornamental design in flowers, $1.

Strawberries.—W. H. Jarvis, 1st premium, Wilson's Albany, $1. M. D. Clark, 2d, McAvoy, 50c. Dr. A. E. Ames, 1st, Hovey's Seedling, $1.

Currants.—Alex. Buchanan, 1st premium, Red Currant, $1. Truman M. Smith, 2d, 50c. Alex. Buchanan, 1st, White, $1. Truman M. Smith, 2d, 50c. W. H. Jarvis, 1st, Black, $1. Alex. Buchanan, 2d, 50c.

Gooseberries.—W. H. Jarvis, 1st premium, Houghton's Seedling, $1; J. W. Selby, 2d, English, 50c.

Raspberries.—Mrs. H. L. Moss, 1st premium, Red and Black, $1.

Apples.—P. W. Nichols, 1st premium, Siberion Crab, $1.

Rhubarb.—M. D. Clark, best 12 stalks, $1 (Mammoth Cahoon, Goliath and Victoria); W. H. Jarvis, 2d, J. W. Selby, 2d, T. M. Smith, 2d (the committee were unable to decide as to the merit of the above), L. M. Ford, 2d, for the best display of 6 kinds, 50c.

Lettuce.—Wm. Endon, best six heads, $1; J. W. Selby, 2d best, 50.

Radishes.—M. D. Clark, best three bunches, $1; L. M. Ford, 2d, 50c.

Cucumbers.—M. D. Clark, best pair, $1; S. Mitchell, (Gardener to Judge Nelson,) 2d best, 50c. M. D. Clark, best display, $1; S. Mitchell, 2d best, 50c.

Cabbages.—W. H. Jarvis, best six heads, $1; W. Endon, 2d, 50c.

Kohl Rabi.—W. Endon, best six heads, $1.

Peas.—M. D. Clark, best peck Dan O'Rourke; W. Endon, 2d, 50c.

Beets.—S. Mitchell, (gardener to Judge Nelson,) best bunch 5, $1; W. Endon, 2d, 50c.

Cauliflowers.—M. D. Clark, best three heads, $1; Mrs. C. W. Borup, 2d, 50c.

Carrots.—M. D. Clark, best three bunches, $1; Wm. Endon, 2d, 50c.

Turnips.—M. D. Clark, best bunch, $1.

Tomatoes.—Mrs. C. W. Borup, best 6, $1; W. Endon, 2d, unripe, 50c.

Beans.—Stephen Hewson, best, $1; W. H. Jarvis, 2d Wm. Endon, 2d, committee not able to decide which.

Onions.—Wm. Endon, best bunch, $1.

Corn.—N. J. T. Dana, best stalk, $1; J. Nicols, 2d, J. W. Selby, 2d, committe unable to decide which.

Holland Spinach.—N. J. T. Dana, best, $1.

PROGRESSIVE GARDENER'S SOCIETY.—We continue our extracts from the proceedings of this Society. The following is a continuation of the subject of Manures:

Stockhardt, in his field lectures, relates the experience of a Saxon farmer who had for many years made use of two marsh plants, reed mace and club rush, for manuring, the first of which proved a powerful manure, and the second had no manuring energy at all.

Constituents.	*Reed Mace.*	*Club Rush.*
Organic substances,	950	980
Nitrogen therein,	6	5½
Inorganic substances,	50	20
Potash and Soda,	10¾	⅜
Lime and Magnesia,	16	4⅛
Phosphoric Acid,	2¾	1
Silica,	4	11

The organic, or humus-forming substances, and nitrogen, it is seen, are about the same in both plants, but, on the other hand, the reed mace contains sixteen times the quantity of alkalies, nearly four times more lime, and three times more phosphoric acid than the club rush. What is true of these two plants is also true of straw; its value lies chiefly in its minerals. Johnston gives the analysis of several fertile soils celebrated for yielding successive crops of corn without manure. These soils, as the analysis shows, are supplied by nature with all the minerals which plants require, though of course, from long cropping without manure, they are almost entirely destitute of humus. One of the most fertile Belgian soils contained only 0.447, or less than half per cent. of vegetable matter. Such a soil would continue to sustain crops without manure until some one or more of the mineral elements was exhausted, and then its fertility would be again restored by the addition of the specific ingredients wanted.

The Essay being concluded—

R. R. Scott.—This subject had been proposed by me, as it was one of the most important topics connected with gardening or farming. A speaker at the course of Agricultural Lectures, last February, at New Haven, had opened his discourse by saying that the three great principles on which success in cultivation depended, were first, manure, second, manure, and third and lastly, manure. This, if correctly reported, seemed very crude, and no doubt was easily understood and appreciated by the reading public and his very popular audience; but without desiring to detract from the standing of the speaker as a farmer, I would say that this trite statement did not satisfy me. While manure is essential, it is not everything. We must have something in the shape of soil for the manure to act upon, and plants which are sustained by the soil and acted upon by the constituents of the soil in conjunction with manure. The Essay just read has so fully met my expectations, that a few remarks I had intended to offer are rendered superfluous; so entirely does the ideas of Prof. Stephens, as to the utility and value of barn-yard manure, when properly treated, agree with my own, that I am relieved from any anxiety on that head. As to the meaning and signification of the term manure, which no less a personage than Baron Von Liebig regards as indefinite and proper to be discarded from the vocabulary of all intelligent farmers, I would say that it appears a good, useful, and expressive term, and worthy of being retained. I mention this because that, like the opinion or dicta of other great men, Liebig's recommendation has already met with a seconder in Dr. John A. Warder, of Cincinnati, who, in presenting an official report to the Horticultural Society of that city, concurs in Liebig's views, and favors the idea that the term is not appropriate; providing always that he be correctly reported, and he claims to speak in a final manner, when he does speak. I am opposed to the condemnation of this old Anglo-Saxon word, which comes to us with a good derivation, and is one of the most useful terms in common use by the cultivator, and preferred by him to the more scientific terms, more in the line of the chemist, and with which he does not desire to interfere.

The French writers have a word equivalent to this; the term *engrais*, translated by our word manure; while they have another for fermenting or barn-yard manure, *famier*, which is equivalent to our word dung. The word muck has even a good foundation, as it will be seen by referring to your dictionaries, meaning enriching matter.

It is very true, however, that in agricultural phraseology too indefinite a meaning has been

conferred on the term manure. Chaptal, a reliable French writer, says, under the general head of manures are comprehended all those substances which, existing in the atmosphere or combining with the soil, can be drawn in by the organs of plants and contribute to the progress of vegetation. This definition agrees precisely with that laid down in the Essay just read. But Chaptal, at the same time, desires to limit the too extensive use of the word, for he adds: "The salts which also serve as manures, are imbibed by the pores of the plants, and serve to stimulate vegetation." "By comprehending all these substances under the generic term of manures, too extensive a signification is given to the word."

He then divides these matters into nutritive and stimulating manures. Here he is again at issue with Liebig, who says: "The beneficial influence of *gypsum*, and many other salts, has been compared to that of aromatics which increase the activity of the human stomach and intestines, and give a tone to the system, but plants do not contain nerves. No substance can possibly cause their leaves to appropriate a greater quantity of carbon from the atmosphere when the other constituents required are wanting."

Now, as Professor Stephens has used the term stimulating in reference to guano, I shall be pleased to have him explain more fully his ideas whether there is a possibility of a plant being stimulated, as we generally understand that term.

If, however, the term manure be applicable to lime, potash, soda, and other such substances, it is equally applicable to burnt clay, water, and even to air itself. Salt also is spoken of as a manure, and gypsum. Salt, however, is used by practical men for its mechanical action in retaining moisture and counteracting the disastrous effects of drought. I shall not at this time enter into the field of the mineral theory, where organic and inorganic manures are contesting their claims. Liebig's theory has several able critics in this country, and time will doubtless throw ample light on the principles involved; in the meantime.with such appliances,as street refuse, stable dung, and cow manure, with a little muck, and compost prepared from refuse vegetable matter, the farmer and the gardener may perchance drive their legitimate, but precarious business, while Lawes and Liebig discuss their peculiar theories and experiments. We have in addition to these home products, guano, that wonderful deposit, worth $40 per ton, which is capable of manuring eight acres, and the supply of which is not yet at all exhausted. Nor do we lose sight of our superphosphates, bones, and meat composts, pure ground bones, bones treated simply with sulphuric acid, manipulated guano, Swan Island guano, Leinau's fertilizer, Ta Feu, poudrette, phosphatic guano, and phuine, by the producer said to be one of the best manufactured concentrated manures. Still more recently we have a grape fertilizer, professing to supply the special elements required for the grape plant; and from the great rage on the subject of grapes, we sincerely hope, for the credit of its introducer, that it may be equal to all that is professed of it. Time only can test this.

I should like to enter much more fully into a notice of these numerous matters now so freely manufactured for the cultivator, but their critical examination is not the work of a day or a year, and not, I regret, within the scope of a plain gardener like myself. I should offer an apology for my occupation of the time of the meeting, but the subject is one in which I felt some interest.

WILLIAM SAUNDERS.—With reference to Dr. Warder's remarks referred to by the last speaker, I may say that I do not, from a perusal of them, as reported in the "*Cincinnatus*," consider them at all final, but leaving the subject as much confused as before. There are several passages in it to me quite objectionable, but to which I will not at present allude. The statement of the old ground that we must know the constituents of the plant, and the constituents of soil, has nothing final in it. I should like to know from Prof. Stephens, what is his opinion of this part of the question, since chemists themselves admit that, although they may analyze a handful of soil, the result is no reliable, practical guide to the cultivator.

JAMES JONES.—Regarding the Essay as embracing and explaining all that it is important for us to know, relative to the principle of the action of manure on the soil, I need only say that the ideas of Prof. Stephens and my own entirely agree with respect to the relative value of barn-yard manure. I have been using that for years, at the rate of 40 loads to the acre, and it answers every purpose. I have pursued a regular rotation of garden crops, and cropped heavily, and my productions have been seen by many of my friends here. I commence with potatoes and cabbages, and continue some crops requiring no special application of manure. I have also employed concentrated manures with immediate and good effects.

Dr. George Pepper Norris desired to offer a few words, having had some little experience in the application of manures. While he concurred in the opinion that barn-yard manure was one of the best materials where available and not too expensive, he could recommend night soil as much more advantageous in some instances. This might be procured in the vicinity of any town; and although many persons were afraid of the crops being burned by its application, fresh from the cellars, he had proved such fears to be groundless. He applied it from the cart fresh from the cellar, and raised early and vigorous crops. His experience was principally in truck farming, as pursued on the Neck, and his soil sandy, in the vicinity of Wilmington. He was disappointed not to hear this recommended by the gentleman who had last spoken.

James Jones, in reply to Dr. Norris's remarks, would say, that if he could obtain night soil conveniently, he would use it; one benefit would result. Weeds would not be so plentiful; but he did not fear the weeds; his purpose would be to look out for the crops, and let the weeds look out for themselves.

C. H. Miller thought that the value of night soil had been stated in the Essay.

Prof. STEPHENS.—The analyses quoted by me in the Essay were given with a view to show the general principles on which the value of night soil depends. Much of the value of such materials will depend on the manner in which they are prepared. While barn-yard manure requires to be thoroughly fermented, before its fertilizing properties become available to the plants, night soil is immediately active.

WALTER ELDER.—As this subject lies at the root of all good culture, you should have it fully discussed; every member should state the result of his practice and observation, and bring all the virtues of the different fertilizing materials to light. I will contribute my mite with some data. We should cultivate enlarged views; look over the garden fence upon the farm, and consider the value of the products. My own soul was once so small as to bury my brains in a flower-pot, and to think that a garden with a few glass structures was the universe; but now I see what a big place the world is. It is generally conceded by cultivators, that barn-yard manure is the best manure for common use; and as it is the droppings of several species of animals, together with straw, I think it better than that of any one specie, when applied to clayey soils and heavy loams in its long fresh state. It warms them, renders them more porous, and allows the roots of rapid-growing plants to enter them more freely. Indian corn, potatoes, melons, squashes, &c., seem to do best upon heavy soils with fresh barn-yard manure; but for sandy and light soils it is best when well rotted, and in that state has a more immediate effect on crops in general. For potting plants it should be almost a mould, and be mixed many months with the soil before being used. Ligneous manures I think must be most beneficial to trees and other woody plants, although seldom ever applied to them. Leaf mould is almost indispensable in pot culture, and the mould at the bottom of the wood pile is better; wood ashes leached, are used extensively upon sandy soils, produce good crops, and solidify such soils; waste charcoal is valuable in pot culture, but too expensive for general use; sawdust is all converted into manure around the city of Edinburgh, Scotland, by bedding cows and horses with it. Tan-bark is also there converted into manures by composting it with other materials, and nursery-

men grow the hardier rhododendrons and azaleas in beds out-doors, made up with two thirds of decayed tan-bark and one-third garden loam. Salt as manure hastens vegetation, and gives earlier maturation to plants than any other kind of manure. I have used night soil fresh from the walls of this city, upon acres; and for onions, beets, radishes, turnips, and carrots, I have never found anything to equal it for early and heavy crops. Poudrette has a similar effect, but these rich matters make cabbage "clubfooted," and do not suit potatoes. The low meadows around Edinburgh, into which the sewers of the city empty, yield the greatest crop of grass to be found; they are divided into lots of three and four acres by ditches which lead the liquid manure around them, and are flooded with it at pleasure; they are let yearly at auction to dairymen. The grasses are fit to cut by the time that grasses elsewhere begin to grow in the spring; they give seven cuttings knee high, and so heavy that the scythe can hardly carry the swath through. The market gardeners of Leith surpass all their contemporaries more inland in the production of early and fine vegetables by the use of sea-weed they gather off the beach after a high tide or storm. Upon the flat meadows of Long Island Sound, between Harlem and Throgg's Neck, the grass, after being flooded by a "spring tide," grows up at a wonderful rate; and asparagus of the finest quality springs up spontaneously all over these. Country people empty the brine of their meat and fish barrels in spring upon their asparagus beds, which is the only manure they get, and they yield plentiful crops. I have used both salt, lime, and urine around the base of peach and plum trees for the cut-worm, which always keeps them off and invigorates the trees.

Calcareous Manures.—I think that lime is best when mixed with other materials. The farmers in the sandy districts of New Jersey who use marl largely, think it best when mixed with lime or barn-yard manure. Plaster of Paris is best for sandy soils, and benefits all kinds of crops grown upon them; it is the best thing for clover I ever used. Road-earth is best when composted with other materials, after lying in a heap and being frequently turned in a year. The same is true of coal ashes; street-sweepings are also best after lying in a heap twelve months and turned over twice. I have heard it often asserted that the ashes of the peat used in Ireland as fuel and called turf, contains more fertilizing matter than any other thing six times its bulk. A relative fifteen miles from Londonderry informs me that the ashes of the "peat" was the best thing he ever used for his vineries, peach and nectarine houses, and also for his wall trees. He exchanged stable manure for it among the people. Now, we all know how valuable peat is in pot culture, and the older the better; so we may well presume that there must be a virtue in the ashes also. An English friend of mine from Wiltshire used to tell me that straw was used for fire to cook with, and the farmers there manured their lands with burned turf, (sod;) they had turf plows that turned up the turf and made it into rolls three yards long; it was put into large heaps and set fire to, and after burning some weeks into a mould, it was spread upon the land, and produced a good crop. The moorland farmers in Scotland do the same thing, and they think that double the quantity of grass grows where the ashes of the heather falls, when they burn it upon their pastures in spring.

I once top-dressed a lawn with grains from John Taylor's brewery at Albany, N. Y., and it produced a wonderful effect upon the grass. At the same place I manured an acre with hops from the brewery, that had lain in a large heap and was well fermented; I then sowed parsnips upon it; the leaves all over grew five feet high. The late Jesse Buel and James Wilson, as well as other cultivators of note, came to view them, and said they never saw anything like them. A patch adjoining was manured with yeast from the brewery, and yielded a very heavy crop of carrots.

[*To be continued.*]



THE BARTLETT STRAWBERRY.

for THE HORTICULTURIST.

Published by C. M. SAXTON, BARKER & C°, New-York.

The Central Park.—No. 1.



WE have hitherto remained silent in regard to the great work progressing in our midst, not from indifference or want of interest, but for want of time to make such personal examinations on the ground as would enable us to speak understandingly. The city papers have, from time to time, produced articles on the Central Park pretty equally divided between indiscriminate praise and indiscriminate condemnation. We can not be expected to indulge in either. Our province is that of candid and honest criticism, untainted, we trust, by prejudice either for or against any of the parties to which the work on the Central Park has unhappily given rise, and independently of them all. We assure the Commissioners of the Central Park that we entertain for them none but the kindliest feelings ; we suppose them to be gentlemen disposed to profit by kindly advice, provided, of course, they are convinced of its soundness. Thus much for our position.

We purpose writing a series of articles on the Central Park, taking up a single subject at a time, such as the Grouping of Trees, Lawns, Roads, Bridges, &c., and treating it in its practical bearings ; afterwards we propose to review the whole subject from an æsthetical stand-point. As a matter of choice, we should prefer to treat the subject from the latter point of view first, but we shall best accomplish our object in the manner first proposed ; and, in doing this, we shall find much to praise and commend, and some things to condemn.

We propose, in the present article, to indulge in a few comments on the *grouping of the trees ;* and we regret that our first subject should be one to call for an unfavorable criticism. The season for planting, however, is at hand, and we have indulged the hope that we might say something that would preserve a portion of the Park from the faults that have already been committed. Our first objection is, that the grouping is too monotonous, especially of the evergreens. Light and shade, variety of form, and the general harmonizing of details into a beautiful whole, seem to have been too much overlooked. We know the immense difficulty of successfully accomplishing these ends ; but it seems manifest to us that too little effort has been made in this direction, and we think more ought to have been accomplished in this way by the talent now employed on the Central Park.

Our next objection is, that the trees are *too closely planted ;* and this is a point to which we most earnestly call the attention of the Commissioners. This close planting, indeed, we consider the great and pervading blemish of that portion of the Park already laid out ; it meets us wherever we turn. It is repugnant to all ideas of good taste and the fitness of things, to see large groups of hemlocks, pines, spruces, &c., planted from two to three feet apart, and within a foot of the pathway. We shall probably be told that it is done for present effect, and that it is designed to thin them out ; to which we reply, this is a great mistake. The present effect on a cultivated taste is any thing but pleasing ; it is true that the popular mind is

not highly educated on this subject, and is more or less pleased with a mere mass of green foliage ; but the Central Park ought not to be made a school in which to foster this condition of things, but rather to educate the public mind for the enjoyment of the highest order of natural beauty. Then, too, the labor and expense of thinning out and replanting these trees ought to be avoided in a costly work like the Central Park. Many of these groups ought to be thinned out within the present year, or the individuality of the trees will be destroyed ; moreover, (and this is an important point,) the growth of the trees is greatly checked while they remain in this crowded condition, and thus the grand object of a well-wooded park made more remote. Again, there is no excuse for thickly planting large growing trees, even for present effect, for we have a great variety of beautiful evergreen shrubs which can be used for filling in, and which in time will constitute a charming undergrowth. We think present effect and future grandeur can both be attained by a judicious use of materials at command.

This article has already reached the limits we proposed, and we shall continue this branch of the subject in our next. Before closing, however, we wish to express our conviction, that by far too great a proportion of the trees have died out. We have no means of knowing whether the cause of this is in lifting the trees, in the planting, or in the compost in which they are planted ; but, with the facilities at command at the Central Park, the success ought to have been much greater. The Commissioners owe it to themselves to investigate the subject, and, if possible, discover the cause, and remove it.

In conclusion, we ask these gentlemen to consider the above suggestions in the same kind spirit in which they are written, and with the same view to the future glory of the Central Park.

ON THE CULTURE OF THE PINE-APPLE.

BY AN OLD GARDENER.

Within the last twenty years there has been a great advance made in the successful cultivation of the Pine-apple ; and although that may be attributed, in a considerable degree, to the improvement in the structures for its growth, and in the methods of commanding the desired temperature, yet probably the advanced state of the knowledge of the laws and principles of vegetable life which has been acquired by practical men has done still more than the improvements in the appliances that they now have to work with.

As we all know, the Pine-apple is a tropical fruit. The general principles by which the growth of it is governed must be constantly borne in mind ; and with a due attention to such of these as are consequent more or less upon its native habitat, the intelligent gardener will find little difficulty in adapting his practical skill to the production of fine specimens of the noble fruit.

The general principles alluded to in the preceding paragraph are chiefly the following : The range of temperature required is from 60° (Fahrenheit) to 90°, with the means of commanding bottom heat (to an equal extent, or nearly so,) in the soil in which the plants grow, or in the material in which the pots containing them are plunged when they are not grown in the soil

without pots. When growing vigorously, a considerable degree of moisture is required; more in the atmosphere than at the root, although the soil, at such time, requires to be kept in a damp condition, but so as never to remain saturated. Air must be supplied liberally when heat and light are abundant, to prevent the plants becoming drawn. A rapid growth, provided this is attended to, will always produce the finest fruit. At all times when the external temperature is low, the growth should not be so rapidly pressed forward, (especially that of the young stock,) but at the same time care must be taken not to produce a sudden check by too great a reduction of heat.

Having stated these general principles of cultivation, we will now give some account of the different modes that are adopted to obtain the requisite conditions of growth as regards plant structures, and modes of heating, and afterwards we will make some practical suggestions for the management of them.

The most simple but by no means the best structure for the growth of Pines is the Brick Pit, the heat being obtained from some fermenting material, such as stable manure, tan, or decayed leaves. When this is adopted, there should be an outer pit surrounding, or on three sides of, the inner one, to admit of the renewal by linings of the fermenting material from time to time, to keep up the heat.

An improvement upon the above pit is to run a brick flue through it, by which the heat can be much better insured; and by such means good fruit may be grown.

Still a better pit can be built by introducing a pipe for hot water with a return pipe beneath the soil, where it must be surrounded with broken bricks, or inclosed within a chamber or flue containing holes to admit the warmth to escape into the soil. By this means, in a pit not more than from twenty-five to thirty-five feet in length, a four-inch pipe will be found a very efficient agent; and we give the preference to such a combined arrangement of fire heat with that from some fermenting material, to that of either of them alone. The reason is this: It has been found by some of the most experienced pine-growers, that where fermenting materials are used a degree of luxuriance has been attained that could only (when compared with other modes of culture) be ascribed to the benefit derived in the shape of nourishment from the ammoniacal, and perhaps other gaseous products of fermentation, when introduced into and converted to its use by the soil in which the plants grow.

The most complete arrangement, at least one that is usually so considered, for a pinery, is, however, a span-roofed house, standing north and south. A narrow path runs round the house. The entire centre is then formed into a brick chamber some two feet deep, into which a hot water tank is introduced; and upon and above this chamber the bed of soil is placed to receive the plants, there being provision made for regulating the introduction of the heat through a stratum of rubble and gravel to the soil above; and for cutting it off altogether. Other pipes introduce the heated air from the chamber below into the house; or sometimes this is effected by a distinct set of hot water pipes.

This is a very effective structure in the hands of an efficient man, but the first cost, if well done, is considerable, and it is more liable to mismanagement than some of the more simple arrangements before adverted to.

Whatever method is adopted, good ventilation, at both top and bottom, should be provided for, and the heating apparatus so arranged that the ex-

ternal air may pass over it and become warmed sufficiently to prevent injury from a chill on its introduction into the house.

The side lights of a house should be so near the ground that the plants may stand on a level with and not below them. And as regards heat, the artificial means employed should be adequate to the supply of it, so as to command from 80° to 90° if needed, whatever may be the time of year.

We proceed to add some hints on culture.

Pine plants are raised from the crowns of the fruit, or from offsets or suckers produced by the stem. These, when taken off, should lie in a dry room for two or three days to harden, a few of the bottom leaves being first removed. These may be planted in a hotbed, or first potted each in a small pot three or four inches in diameter. The soil must be firmly pressed round them, and then let the pots be plunged in a hotbed, and shaded from the hot sun until well rooted. A little water will be required at root, and the tops should be surrounded by a moist atmosphere, which may be obtained by sprinkling them slightly. When the pot fills with roots, shift into a larger pot without breaking the ball of roots, and plunge them again in the bed.

The soil for Pines is a turfy loam not too heavy, chopped up with a spade, and used in a rough state, and not sifted. Some bone dust or broken bones may be added ; and a small quantity of decayed leaves or leaf mould will be of advantage, if the loam is stiff.

When the plants have been shifted once out of their striking pots, those that have made good roots to fill the pots may be grown rapidly through the summer and fall months, increasing the supply of moisture and air, according to the heat, and shifting as required by the degree of the root growth, until they are got into their fruiting pots, which may be not less than ten or twelve inches in diameter. It is undoubtedly best to plunge the pot up to the rim, or nearly so, during the whole time of growth, as it is much easier to maintain the temperature at the desired point by so doing.

In shifting the plants examine the roots, and disentangle or loosen slightly the points of some from the ball, so that they may readily take hold of the new soil when shifted ; but avoid breaking or cutting away any except a decayed root. It is best to avoid shifting plants from October to February in localities where the external temperature is severe in winter. During those months light is deficient, and the aim then should be (by keeping the plants at a temperature not less than 60° to 65° at night to 75° in day) to prevent them from sustaining any check, but not to stimulate growth, until the approach of spring and summer affords the expectation of congenial temperature to aid the exertions of the gardener.

The system of planting out the Pines in the house instead of fruiting them in pots is now much more popular with pine-growers than it formerly was ; and provided the arrangement is good for the supply of bottom heat, it doubtless has many advantages ; and it also saves labor. Without adopting the tank system referred to above, the bed for the plants may be prepared by covering the bottom with a layer, well rammed down, of stones, broken bricks, and rough gravel, some six or eight inches deep. On this lay hot water pipes, covering them over with the same material, and then a layer of turf over the whole ; upon this place the soil for the plants about twelve inches deep. The soil should consist of the turfy loam before mentioned, rough, and rather larger bones (broken the size of walnuts) than for pot culture.

After planting keep the house shaded a few days, and rather moist and close. Give air liberally in fine, bright weather, and water sufficient to keep the soil damp, but not saturated. The atmosphere should be kept always moist (except in severe weather) by sprinkling the plants, (but not so as to cause water to remain standing in the axils of the leaves,) and by throwing water on the paths. Give air liberally whenever the external temperature allows, and shade slightly in very hot weather. Never let the temperature sink below 58° to 60°. With favorable weather and a rapid growth in progress, it may advance to 90°, or even higher. More water at root will be required as the fruiting plants swell to maturity, but when full grown slightly reduce the moisture at top and bottom, by which means the ripening process will be more complete and the flavor enhanced.

The same rules of general management apply equally to the plants in pots.

[At this time, when pineries are occupying no inconsiderable share of attention, the above interesting article by an old pine-grower will prove highly acceptable. We have the promise of more on the same subject. There are already four pineries in the vicinity of New York, and more under way. —Ed.]

LANDSCAPE ADORNMENT.—No. IV.

BY GEO. E. WOODWARD,

Civil and Landscape Engineer, 29 Broadway.

Color, as used in ornamental planting, enables one to produce many varied, beautiful, and artistic effects, not only by appropriating aërial perspective, but by opening a study in the habits and changing colors of trees that hitherto has not attracted much attention. The tree that with the opening spring comes out with a fresh yellow-green, will, through the changes of summer and autumn, exhibit many tones of color, and, finally, the dying leaf will assume the brilliant and gorgeous hue so peculiar to our autumnal climate. To plant a vista, or group, so combined with various species of trees, that, with each changing season, or week, or day, the harmony of color shall still be preserved, and their crimson glories be in unison with and fade off to the slightly-varying colors of the evergreens, requires a refined and cultivated taste to arrange and to appreciate.

Those deciduous trees, whose autumnal beauties are so much admired, are foreground trees when in the glory of their summer verdure. Their greens are rich, warm, and beautiful, and their fading tints of brilliant colors are still more of that warm and positive character; yet among autumnal tints there are some that are cooler than others, and should be planted in the distance. Very beautiful effects might be produced by planting groups both for the summer effect of rich verdure and the autumnal blending of gorgeous colors.

In planting vistas where we propose to make use of the effects of aërial perspective we must consider that a wide difference exists between a lighter color and a cooler color. Very many writers on this subject do not take this into consideration, but state that perspective vistas should run off into lighter colors, when the fact is, that middle and distant tones should be negative, not the warm yellow-greens of some of the lighter-colored trees.

Among the various ornamental trees selections can be made of colors that shade towards the blue, purple, or grey, for planting distant tints. We can not, however, always get the precise tint desired : it is easier to mix up a tint on our palette than to find it growing ready for our use. Nor is it possible to reach that degree of art which shall be beyond criticism ; but we can execute that which will be appreciated, and is strikingly beautiful. Ornamental planting, considered artistically, differs much from every other application of art ; unlike landscape painting in not being executed on a flat surface, with color and effects completely under control, resembling mosaic work in the selection of color in real objects, and yet embracing both natural and artificial perspective and atmospheric effects, dealing with real objects in color, form, light, shadow, relief, etc., and compelling nature, by the use of her own materials and suggestions, to complete her beautiful designs. A knowledge of art in one instance is knowledge for all applications of art ; and the pencil, palette, and brush lead the way to educate the mind, the eye, and the hand, in all the leading principles of the arts of design and construction.

Many of the old writers on Landscape Gardening maintain, that planting with one variety of trees will produce the grandest effects. It is not true, however, in the bold teachings of nature ; there we see a never-ceasing display of all varieties of color, form, species, etc., harmoniously blended. Harmony in landscape adornment will not admit of any ignorance of the combination, gradation, and blending of colors any more than it will admit of ignorance of form or habit of trees. Contrasts we prefer to create by light, shadow, and relief, more than by the violent opposition of color or form. All the requirements of art in an artist's hands can be made to produce that which is the most beautiful and most in accordance with the principles of good taste ; the same requisites in other hands may be used as vile illustrations to prove the falsity of art. The colors on the palette are the same to all ; but he who combines them, gradates, and harmoniously arranges them, has no inferior skill or ability, while the same colors, ignorantly or unskilfully applied, yield nothing but disappointment.

The use of color in plantations extends the field of variety, and, carefully studied in all its many applications, it will suggest new uses in concealing defects, revealing attractive points, or giving a new expression to landscape scenery.

> " He gains all points who pleasingly confounds,
> Surprises, varies, and conceals the bounds ;
> Calls in the country, catches opening glades,
> Joins willing woods, and varies shades from shades ;
> Now breaks, or now directs the intending lines ;
> *Paints as you plant, and, as you work, designs.*"—POPE.

ROESSLE'S CELERY CULTURE.

MR. EDITOR :—Being curious to see the above work, by the modest manner in which its coming was heralded, I purchased a copy ; and believing that I have paid pretty "dear for my whistle," I beg you will allow me to say a few words in relation to its contents.

In all the very small book the author does not advance a single idea that can be claimed as original. It is merely a very meagre relation of the

practice of *private* European gardeners, which our best market gardeners here discarded years ago, nearly as long since, in fact, as the lumbering stage-coach has been discarded for the locomotive. We should not have noticed the work in question if the author had confined his advice to private gardeners ; but when he specially dedicates to market gardeners his "old fogy" practice as a new system, or even a good system, then we beg to tell him, and any unfortunate tyro into whose hands it may have fallen, of our method, and wherein we claim the advantage over Mr. Roessle's stage-coach practice.

First : all his directions about raising the plants in hotbeds are useless, from the simple fact that plants sown in the open ground in April and planted out in July will give excellent Celery the first week in September, which is as soon as it will sell in market—as soon as any one wants to eat it, except, perhaps, the guests of the Delavan House.

Second : the system of digging trenches two feet deep, prepared in the manner described by Mr. Roessle, and planting the Celery therein, will cost, in labor alone, nearly as much, by his own admission, (one cent per head,) as the average of Celery in New York market sells for ! not taking any thing into account for the manure or the ground. Another unfortunate admission he makes, and one which is our main argument against the trench system, aside from expense, is the fact, that when a trench is dug two feet deep, and a small plant of Celery, or any thing else, planted at the bottom, the first heavy rain-storm will wash down the sides of the trench, and consequently cover up the plants with the soil. Mr. Roessle says he has lost hundreds of thousands of plants in this way, and still his disastrous experience has not much helped him, as he only recommends rounding the bottom of the trench, which involves further expense, and would help matters very little.

Nearly all the Celery sold in the New York markets is grown as a second crop ; (Mr. R. never refers to it as such.) Our ground is first heavily manured in spring for our crops of early cabbages, beets, or onions, which are sold off usually by the first week in July. The ground is then cleared off, plowed, and harrowed, and at once planted with Celery, *if the ground is moist enough to receive it.* The Celery is planted in rows four feet apart for early, and three feet for the late crop—plants in each case six inches apart—all on the surface of the ground. This is what is technically termed the "flat" system. We never manure specially for Celery unless the crop preceding it has been neglected, and then we manure over the whole surface, as any one of experience knows that the feeding-ground for the roots is not confined to six inches on each side of the plants, but that they will meet in the centre of four-feet rows ; hence the absurdity of manuring only in the rows. The culture of the crop by the "flat" system is very simple. In a week or so after planting, the ground is run through by the triangular hoe harrow ; this is continued at intervals of ten or twelve days throughout the season to keep down the weeds and stir the ground. A man and horse cultivate four acres per day, or something near 120,000 roots, which, by the trench system, would require all to be hoed by hand, involving at least twenty times the amount of manual labor.

As soon as the Celery gets to be fifteen or eighteen inches high, instead of the hoe-harrow we use a plow to throw a slight furrow to the Celery ; then the "handling" or straightening-up process is gone through with and a heavier furrow is then thrown against it. It is then allowed to remain eight or ten

days to extend the hearts, when the banking process is finished by the spade. This is the practice with what we sell in September, October, and November. That which we put away to preserve for winter use is done the same with in every respect, except that it is not banked up by the spade nor blanched in any way before being put away.

This brings us to another part of Mr. Roessle's system which we most emphatically condemn—"the burying away of Celery for winter." The practice, as described by him, is the same in every particular as was used by us about ten years ago. Since then our present plan has been almost universally adopted, the last of the "old fogies" having succumbed some years since. Having been engaged in the practice of both modes, I will state as a fact, that in the method recommended by Mr. R. (which we termed "store-beds") ten men were required to put away 5,000 roots per day ; now the same number of men, by our present method can, with much lighter labor, put away 25,000 per day. Now, as this is a much-mooted point in Celery culture, I will endeavor clearly to explain the way we manage it.

The crop being all handled and straightened up, we begin to put away what we want for use through December on the first dry day after the 25th of October, (dates are of great importance for localities of the same temperature, though Mr. R. seems to ignore them altogether,) and so continue until we finish, which we usually do about the 15th of November ; any later, in our district, is dangerous for frost ; earlier, the Celery will whiten too quick, and rot.

Our manner of preserving is to choose a sandy, or at least a dry spot, in an open exposure, stretch a line, and dig a trench or drain ten or twelve inches wide, and of the depth of the Celery to be put away. It is then dug up, the earth well shaken from the roots, and packed *perpendicularly* in the trench or drain just tight enough not to bruise the stems. No earth is put to the roots whatever, the damp soil in the bottom of the trench giving out moisture enough to nourish the roots sufficiently for all purposes of blanching. It will be understood that the trench or drain is simply packed full of the Celery—an easy process, which any man can do, while by our old system, recommended by Mr. Roessle, very few men can be found to do it without considerable practice.

But our preserving process is not yet complete. Supposing we finish by the 15th of November, in this partially secured state it will withstand almost any frost we ever have during that month ; but by the beginning of December we throw on the sides of the trench, so filled, about three inches of stable manure, yet still leaving a strip of green uncovered to permit evaporation ; if closed up at once it will ripen too quickly. About the middle of December we make our final covering of six or eight inches of rough stable manure, pretty firmly packed down with the back of a fork over the tops of the Celery, and for one foot on each side, so as to prevent the severe frost from striking in from the sides of the trench. Our whole process of Celery culture is then finished, when it is ready at any time, or in any weather, to be taken out for market, no other trouble being required but to remove the straw covering and lift it up with the hands. By this plan of preserving we do not lose five per cent., while by that which Mr. Roessle's book treats of our losses were at least twenty-five per cent., and Mr. R. must have been unusually fortunate if his were any less.

Another matter that seems to exercise Mr. Roessle very much is what he

terms our disgusting practice of covering with stable manure, and assumes, with great self-complacency, that that is the cause of the rust he saw on some of the bunches in the New York market. Such a silly assumption as the last it is hardly worth while to refute ; but if manure in contact with esculent roots is disgusting, the wonder is why he ever recommends its use at all, as I think it would give him some trouble to tell us how he manages to keep it away from the cuticles of radishes, potatoes, carrots, etc., which would be equally contaminated by it as the cuticle of the Celery stem. The rusting of Celery is from some other cause which we have yet to learn, although Mr. R. so triumphantly settles it to his own satisfaction.

There are some other matters that I will just allude to in this Celery book. He says that the trenches should only be prepared when the wind is either north or west, and that he will then plant without regard to rain, and never waters. Now I would like to ask him, or any other practical man, if he had planted Celery in such a summer as the past, where in most localities there has been no rain for thirty days, with a burning sun and high temperature, would there be a single plant alive ? This smacks a little of our Jersey Dutchman's "moon-planting," of which we have still a few victims left.

Again he says, "Celery plants should never be topped before transplanting : leaves are the lungs of plants, and can no more be dispensed with than the same organs in animals." In this matter we are by no means so tender-hearted as our worthy author, for we mow off with the scythe at least three inches of the "lungs" twice in the season before transplanting, and yet in nearly half a million which we grow annually have very few consumptive subjects. Mr. R. has evidently a genius for arriving very rapidly at conclusions which seem quite satisfactory to himself.

The gentleman informs us that he is about to treat us to another hand-book on gardening products, and is going to give as his next, "How to raise a Potato Crop without 'Rot.'" What a world-wide philanthropist he will become ! Ireland will be regenerated forthwith, and the green isle be again made to "blossom as the rose." Hurry up, Mr. Roessle ! don't let starving thousands droop that might be saved by a few strokes of your magic pen ; don't keep us longer in suspense, and you will much oblige

A Jersey Market Gardener.

[It is sometimes a very pleasant thing to fall into the hands of a Jerseyman ; what Mr. Roessle will think of it in this particular instance we can only imagine. We have heretofore said, that in many respects we should be loth to follow Mr. Roessle's practice ; and most practical men will probably agree with "A Jersey Market Gardener," that Mr. R.'s advice should have been confined to *private* practice.—Ed.]

NOTES ON THE GLADIOLUS.

BY DANIEL BARKER, GARDENER TO B. K. BLISS, SPRINGFIELD, MASS.

Among summer flowering bulbous plants, the varieties of *Gladiolus gandavensis* may not inaptly be considered as one of the very best cultivated. It is difficult to conceive any thing more truly beautiful than a bed of the best varieties in bloom, when in a high state of cultivation. At no very remote period Gladiolus psitticinus was the only kind cultivated in the flower-

garden ; now, owing to the rapid improvement by cross fertilization within the last few years, there are some hundreds of varieties, some of which are extremely beautiful, and well worth any trouble and care that may be bestowed upon them.

I know nothing more surprising than the rapid strides that have been made within the last few years in the improvement of this rich, bright, and beautiful genus. Compare any of the plates in the gardening periodicals of a few years ago with those of the present day, or the number of varieties offered for sale in the catalogues of 1850 with those of the present year, and surprise at the advance can not but be the predominant feeling. But to fully appreciate their great beauty and merits as superior plants for flower-garden decoration, visit some establishment where the finest varieties are grown, and where no care and attention are considered too great to bestow upon them, and my word for it they will at once become petted gems ; and well they deserve it. To my mind, a good collection of them, grown in masses, with a background of dark green, is one of the most charming and effective that can be produced upon the flower-garden.

Whenever cut flowers are in demand the Gladiolus will be found to be among the most valuable. If a raceme be cut and placed in water just as the lower flowers commence to open, the whole of the flowers will expand equally as well as upon the plant.

The colors comprise a rich and greatly diversified combination of the most beautiful tints of scarlet, orange, and vermilion, with intermediate shades of white, pink, salmon, carmine, rosy salmon, with many others of the most beautiful conceivable colors, such as very few genera can offer.

The following is a list of some of the best varieties in cultivation : the description of each was taken when the plant was in the highest state of perfection, and may be fully relied upon.

GLADIOLUS GANDAVENSIS HYBRIDS.

Adonis.—A very fine variety, with tall scapes of flowers of a rosy salmon, shading off to soft carmine.

Aglœ.—A very showy variety of a fine salmon, richly shaded with bright carmine.

Amabilis.—A fine tall growing variety of a bright scarlet color: very effective.

Archimedes.—A very beautiful variety, the colors of which are a rich combination of scarlet, salmon, and carmine.

Brenchbiensis.—One of the most effective for growing in beds or groups, of a rich bright scarlet color with red stripes.

Calypso.—An extra fine variety, with noble racemes of flowers of a beautiful soft rose beautifully marked with carmine.

Canary.—Soft yellow, with shades of rose deepening in color as the flowers advance in age.

Clemence.—A charming variety, with extra fine racemes of flowers of a pure white ground finely striped with rose and bright crimson.

Ceres.—A new and very striking variety, with noble racemes of large flowers of pure white finely spotted with light rose and purple : extra.

Comtesse de Bresson.—In this fine variety we have a beautiful combination of scarlet, bright carmine, and rose.

Couranti Fulgens.—A very fine variety for groups or masses in the flower-garden : color bright dark crimson.

Chateaubriand.—A fine strong growing variety of a light vermilion red, frequently mottled with deep rose.

Daphne.—One of the earliest varieties, of a deep rich salmon color, striped with crimson : very effective.

Don Juan.—A fine variety, producing fine strong racemes of rich deep carmine flowers, shaded and striped with purple crimson.

Duc de Malakoff.—A new and elegant variety, producing fine strong racemes of flowers of a light yellow ground beautifully marked with deep orange and soft carmine.

Egerie.—A fine variety for growing in masses ; a fine strong grower ; the colors of the flowers are a beautiful combination of light salmon, carmine, and orange.

Goliath.—An extra strong growing variety ; the flowers, when first opened, are of a brilliant carmine, gradually changing to orange red, frequently mottled with very soft rose.

Galathée.—A delicate and distinct variety of a beautiful creamy white blotched with carmine : extra.

Hebe.—A fine light salmon edged with white, and mottled with peach and light carmine.

Imperatrice.—A fine strong growing variety, well adapted for planting in masses ; flowers a rich rosy salmon.

Joan of Arc.—An indispensable variety wherever the Gladiolus is grown; flowers a delicate white, slightly tinted with rose and striped with rich violet carmine : extra beautiful.

Lord Raglan.—A new and very beautiful variety, with very large flowers of a rich salmon finely blotched with vermilion : very fine.

Le Toussin.—A new variety of great merit ; flowers a vermilion red upon pale sulphur ground, the lower petals spotted with white : extra fine.

Jenne.—A new and very beautiful variety of a fine rosy orange color, finely spotted on a light sulphur ground : extra fine.

Madame Auguste Lefebvre.—An elegant variety of a light peach color, striped and blotched with carmine and deep red.

Mathilde de Landevoisin.—A fine variety, producing large strong racemes of white flowers striped with deep violet purple.

Monsieur Corbay.—A fine orange carmine, finely shaded with scarlet.

Napoleon III.—One of the finest varieties grown, producing large strong racemes of flowers of the brightest scarlet beautifully streaked with white : *extra extra.*

Neptune.—A beautiful variety of elegant habit, flowers of a shaded carmine, very rich and effective.

Ninon de l'Endos.—One of the most desirable of the light class ; flowers a delicate blush white and rose with crimson centre.

Pellonia.—A very beautiful mottled variety of bright rose and carmine : extra fine.

Sulphureus.—Sulphur yellow ; very effective.

Triomphe d'Enghein.—An elegant variety for beds and masses, shaded crimson, of very dwarf habit.

[We agree with Mr. Barker, that the improved varieties of the Gladiolus are among the most beautiful objects which adorn the flower-garden. The new ones introduced last spring are strikingly beautiful, and we trust will have a wide dissemination.—Ed.]

THE CULTURE AND MANAGEMENT OF HYACINTHS, IN POTS, GLASSES, AND BORDERS.

BY WILLIAM ELLIOTT, NEW YORK.

The months of September, October, and November are usually regarded as the proper season for planting the majority of bulbous-rooted plants: a word or two as to the manner of doing it may therefore not be considered out of place, but be acceptable to those who, for the first time, attempt to grow their own flowers, for whom, indeed, the following remarks are chiefly intended.

Plants of this class form what may be termed the staple of our earliest blossoms. They may be had from December to April in constant succession with perhaps less trouble than would attend the culture of most plants for so long a period at the most inclement part of the year; hence their value and universal adoption.

Like its allies, the hyacinth delights in a rich porous soil; this is easily provided by mixing together one-third coarse sea or river sand, one-third thoroughly decomposed turf, one-fourth rotten cow-dung at least two years old, and the remainder decayed leaves. A compost of this kind I have used for a number of years, and in all cases have found it sufficient to meet the requirements peculiar to the class of plants under consideration. It is a matter of much importance to the grower to be particular in regulating the time of potting to that of the time they are required to be in bloom, for it is next to impossible to expect bulbs to throw up fine flowers, which have only been potted a few days previous to their exposure to the action of light and heat; they can not have provided themselves with the means of living, let alone those required to perfect their floral development. Their utmost endeavors, the greatest efforts of their nature, are therefore altogether abortive; in short, they are rootless, and plants without roots are in a state of nullity as regards development of any kind; but pot them early to allow time for the protrusion of roots, and your efforts will be crowned with success.

With regard to the mode of potting, it is very simple, and may be thus described: In the first place, drain your pots thoroughly by means of broken potsherds placed in the bottom of each pot; then fill the pots to the rim with the compost already referred to, without pressing it down; take the bulb and place it on the surface, pressing it down until its neck is level with the rim of the pot, watering the whole, using a moderately fine rose, to settle the soil round the base of the bulb; then remove them to a cold frame or some sheltered situation, standing the pots close to each other on a thick layer of charcoal dust or boards, to prevent the ingress of worms; cover them entirely over to the depth of a foot or eighteen inches with fresh leaves or saw-dust; but I prefer the former on account of the genial heat which they impart, being highly conducive to a vigorous start: they ought to remain in this position for at least from four to six weeks, affording the bulbs an opportunity to make plenty of roots. During the time they remain in this position they will require examining two or three times, giving water when required. After standing for the time mentioned they will have started to grow: select from among them the most forward, and shift them into a larger-sized pot, leaving the remainder to come in in succession, to be treated similarly. They

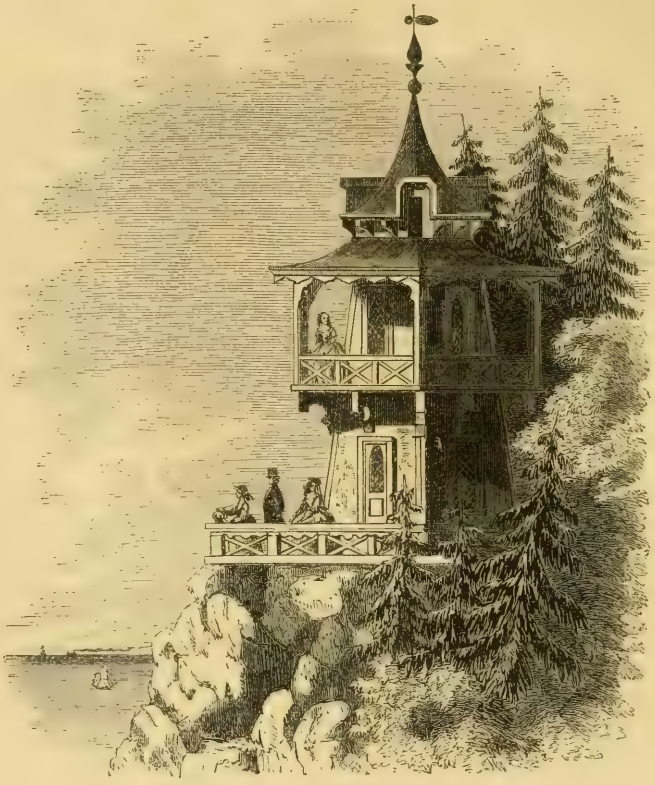
may now be considered in a fit position to be brought into the greenhouse or parlor. In doing so be careful that the temperature of the house does not exceed 55° or 60° for the first week or ten days, raising it gradually as they advance in growth; for too much excitement at any time will inevitably spoil the plants.

As the plants advance in growth they must be supplied with water as often as they require it. They will be very much improved, both in vigor and color of flowers, by watering occasionally with liquid manure or guano water. When the flowers are expanded remove them to the coolest place in the parlor or greenhouse, where they will continue in bloom much longer than if left in a high temperature. Hyacinths form a beautiful ornament when grown in glasses. For this purpose colored glasses are preferable to white, because too much light is injurious to the bulb. The bulbs for this purpose should be procured as early as possible, and placed in the glasses, filled up to the neck so as about one-fourth of an inch of the bulb is covered, using soft water, standing them away in a dark closet until their long fleshy roots have nearly reached the bottom of the glass; after which expose them gradually to the lightest position you can afford. As soon as the water becomes fetid and muddy it should be renewed, say twice a week. In severe weather they must be removed from the window to keep them free from frost.

Those intended for out-door decoration can be planted from the latter end of September to the middle of November; but the sooner the better. As regards the planting, it is done, nine times out of ten, in a manner that would prove fatal to things of far less value. A hole made with a dibble into which the bulb is thrust without any other apparent desire than to place them out of sight, is the sum of attention they receive, in this very important operation, at the hands of some of our patent practitioners; and when the blooming season comes, instead of having a fine bloom of strong thrifty plants, the reverse is experienced. As a matter of course the blame is thrown upon the quality of the bulbs, which, in nine cases out of ten, do not deserve it. As I have already stated, all bulbous plants should be allowed every facility for the spread of the roots; and the only way to insure this is to stir up the beds or borders to the depth of two feet, mixing in at the same time as much rotten cow-dung and coarse sand as practicable. This done, remove from the surface about four inches of soil; then place the bulbs on the surface from nine inches to a foot apart, covering the whole with the soil removed, leaving the soil perfectly loose. In the opposite case—planting with a dibble—the soil is compressed all round, which, if the soil is adhesive, forms a receptacle for water to generate to the utter destruction of the roots.

The only additional attention they will require will be a good thick covering of rough manure to prevent the frost from penetrating too deep.

[Much obliged to you, Mr. Elliott, for your sensible remarks on bulb culture. Mr. E.'s friends know him as a "sound" writer on such subjects, but in this case he has forgotten the size of his pots. It will do to begin with four-inch pots and shift into six-inch size.—Ed.]



OBSERVATORY.

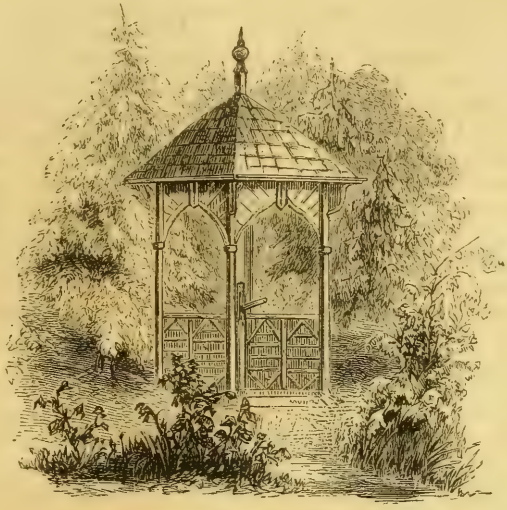
DESIGNS IN RURAL ARCHITECTURE.—No. 6. RURAL OUTBUILDINGS.

BY GEO. E. HARNEY, LYNN, MASS.

In continuation of our last, we herewith present two more designs of outbuildings, an Observatory and a Pump House.

The first represents an Observatory or look-out Tower, suitable for a situation on a high bluff, overlooking the ocean, or an extensive land prospect. This tower consists of two stories. The lower is ten feet high, and is surrounded by a gallery about eight feet wide, and guarded by a heavy balustrade. Inside the building are the stairs to the second floor: we here have a hexagonal chamber, surrounded on all sides by a covered balcony opening from it by means of casement windows.

A building like this should have a very strong frame, well put together,



PUMP HOUSE.

and should be tied to its foundation by means of iron rods, with elbows firmly wedged into the rock. This will enable it to stand perfectly secure in the strongest winds.

The second is a design for a Pump House, built of rough twigs in the same manner as No. 1 in the HORTICULTURIST for September. It is six feet square.

EXPERIENCE *vs.* THEORY.

BY JOHN B. EATON.

NEARLY annihilated as I would naturally be supposed to have been by the crushing denunciation of the gentleman from Fox Meadow, in your September number, it is, perhaps, no more than proper, Mr. Editor, that I should show some indications of not being quite extinct, and of having sufficiently recovered to be capable of writing a few lines by way of rejoinder.

A grievous and unpleasant thing it unquestionably is to have unwittingly fallen under the severe displeasure of such "a veteran grape-grower" as Mr. John Ellis, but it is still a slight comfort to be informed that he has "no particular objection" to my plan, except in so far as it conflicts with his own prejudices, which, unfortunately, happen to be at variance with nearly every one of my suggestions.

This is to be greatly deplored; and at the risk of being utterly extinguished

by another broadside from Mr. Ellis, I will endeavor to show that I am not so entirely wrong in every particular as he endeavors to prove.

I have been informed that Mr. Ellis grows very good grapes. I am unable to say whether he grows them in the old-fashioned shed-roofed, lean-to houses for which he expresses such a decided preference. Perhaps it would have been well had he enlightened us upon this point, and also stated whether he had ever grown grapes in a house such as he so unhesitatingly condemns. If, as I infer, his houses are built upon the lean-to principle, it might be well to inquire whether he grows vines upon the back wall, and if so, whether they do not receive much less light, and ripen their wood and fruit far less perfectly, than on the north side of a span-roof. If he grows but a single row of vines, I should think it decidedly cheaper for "a commercial man" to have a *little* more glass, and a much larger quantity of grapes, by inclosing them under a span-roof. This proposition is, I believe, pretty generally admitted. Not so his statement, that "we invariably find in all houses erected on the curvilinear principle, that the vines and fruit are better on one side of the house than on the other." This is true of houses placed on an east and west line, but I have yet to be convinced that it is "invariably" the case. There are within the limits of this city over twenty curvilinear-roofed vineries, of various forms, and in various positions; and I am quite certain that unless one side has a nearly full southern exposure, Mr. Ellis would find much difficulty in detecting any important difference between the fruit from either side of any of them; lean-tos of course excepted. "Around New York" it may be the case that a house glazed upon all sides "makes a very poor forcing-house." We, who don't happen to have the pleasure of living in that favored vicinity, may possibly be permitted to entertain a different opinion; and I can instance a very good forcing-house, belonging to a "commercial" establishment in which I was once interested, that was not only glazed all round, but with the exposed end facing nearly north. In this we grew no grapes, but plants infinitely more tender were forced very successfully, the house being a part of a range of sufficient extent to require some 3,000 feet of pipe, worked from one boiler. I could also mention a propagating house, a structure usually considered as requiring more protection than any other, of glass, less than a hundred miles distant, built by a "commercial" firm of much intelligence and enterprise, with the intention of its being a model of its kind, which has a span-roof, and is not connected with any building. It has been for several years in operation, and has, I believe, given entire satisfaction. It would seem, therefore, that a lean-to roof is not absolutely indispensable.

It is perhaps superfluous for me to allude to the varieties proper to be grown, as Mr. Ellis proposes "to settle the whole question on this point at once," by his individual dictum.

I have no intention of denying that the Black Hamburgh is the most profitable variety that is cultivated, but we "country cousins" are not yet civilized to that degree which would render it impossible to eat anything but "Hamburghs and Muscats;" and other varieties *are* eaten, and sold, too, not quite so readily, perhaps, but still at prices varying but little, if any, from the standard. Consequently I see no good reason why the earlier sorts should not be planted to a limited extent; for if it is an object to force grapes at all, the difference of fifteen or twenty days in time of ripening between

the Chasselas, etc., and the Hamburghs, is certainly worth something, even to "a commercial man."

I confess myself a little disappointed in Mr. John Ellis. From his former communications I imagined him to be a very sensible, clever man; but the tenor of his last one strongly inclines me to suspect him of being one of those self-sufficient, captious "practical gardeners," who are so strongly impressed with the opinion that they are the fountains of all horticultural knowledge, that they are not willing to allow that any one out of their own guild has a right to speak of matters pertaining to their craft.

[Fox Meadow's style is forcible, and he expresses his opinions confidently, but we should be sorry to think he was animated by any unkind feeling; we would rather hope that both parties have no other desire than to be useful, and will not lose their temper.—Ed.]

REVIEW OF THE GRAPE QUESTION.

BY A. S. FULLER.

(*Continued from page* 441.)

The Detached and Divided Border.—We are really surprised that the author of this work should claim this as original, or even *new;* for vine borders upon the same principle, if not in the exact form, were constructed more than one hundred years ago, as may be seen by consulting almost any work upon gardening of that time.

Clement Hoare, in his work on the cultivation of the grape, an edition of which was published by W. D. Ticknor, of Boston, in 1837, advocates this form of border, and his plan is so similar to that in the work under consideration, that we are induced to quote a few lines from each.

Bright, on page 55, says, "The inside border, at first, if true economy be consulted, should be made only two feet deep and three feet wide, resting upon a concrete bottom, with six inches of small rough stones or oyster-shell drainage above it," etc. Page 61 he further says, "That in addition to placing the grape border altogether inside the house, and detaching it from the front wall and from the soil, we have also lately divided the border into sections two feet wide by brick partitions, keeping every vine by itself," etc.

Hoare on the Grape, page 159: "Another general rule also remains now to be mentioned, which must not be departed from. All vines intended for early forcing should be planted *inside* of the vinery." Page 160, after giving directions for the excavation of the border, he continues: "Pave the whole area of the bottom with good hard bricks, well jointed together either with cement or well-prepared mortar."

"Now, as a series of walls is to be run up parallel to the ends of the house for the flooring bricks to rest upon, the next step to be taken is to divide the area of the bottom into as many equal portions, or breadths, as shall be equal to the number of vines intended to be planted.

"The roots of each vine being thus kept separate, any vine can be taken up, and removed, if circumstances should at any time render it necessary, without disturbing the roots of the other vines." Thus it can be seen that the detached and divided border is far from being original with Mr. Bright.

Proper drainage is well known to be the first essential thing in making a vine border; and that the soil is certainly more congenial to the grape than a solid and impervious concrete, is evident. The injurious effects resulting from the roots of the vines going to too great a depth in the soil, which is urged by some vine-growers, is not so great an evil as would result from the impervious bottom. These impervious bottoms prevent not only the passing down of surplus moisture, but prevent the ascent of underground warmth.

These divided borders with impervious bottoms have been thoroughly tried in England, and in a few instances in this country, and we regret to say that in most instances they have failed to give satisfaction.

Mr. Marnock, of the Botanic Garden of Regent Park, England, says that he had made such borders, and upon examining several of them, that he very much doubted their practicability, as the moisture could not escape, although the borders may slope very rapidly to the front drain.

The fine sediment that will descend to the bottom and fasten itself there, will form a thick puddle that will prevent the surplus moisture being carried away, and the roots that come in contact are consequently destroyed. In "Johnson's Gardener," vol. iii., p. 109, when speaking of the detached and divided border of Hoare, he says: "This is a failure; and it is a subject for regret that one who had written so ably and practically on wall-culture of the vine, should have reasoned so incorrectly, and launched forth such wild theories relative to the management of its roots." Thus it appears that this very border that is recommended by Bright and put forth as new, is an old feature in grape-culture, and one, too, that has been condemned by some of our best and most experienced gardeners.

The chapter on preparing the soil for vineyards I would heartily recommend, if he would only add a few inches more in depth to the soil.

It is not for the purpose of aiding the roots to penetrate deeply into the earth that we advocate trenching two or more feet deep, but it is to cause the surplus moisture to pass off quickly, and yet have it sufficiently sponge-like to supply the wants of the roots.

This point has been fully investigated and proven, that deep tillage is indispensable in vine-culture. That the Ohio German, as well as all other systems practised in this country, is based upon the plan of deep rich borders, and deep trenching and heavy manuring, as Mr. Bright asserts, I think is incorrect.

That it has been advocated by a few authors, and in a very few instances put in practice, I do not deny, but if our observations have been correct, in a majority of cases the very opposite has been the case, and the very want of good culture has been the cause of the many failures.

We know of some vineyards near Cincinnati that were planted fifteen years ago upon soil that was plowed only fifteen inches deep, and they have succeeded very well. But they were planted upon hill-sides where the soil is naturally rich and deep, yet these vines show signs of failing when they should only be in their prime; and the men who planted them are now trenching their grounds two feet, and in some instances twice that depth for their new vineyards, having learned by personal experience what has been taught in the books of past ages; namely, that a deep, rich, and porous soil is the only soil where the vine flourishes.

Although we have found in this treatise of Mr. Bright those things

which, in justice to the horticultural public, we feel called upon to condemn and expose, we have also found that which, to the amateur, is of much value ; and instead of condemning the work as a whole, we should be glad to see it widely disseminated. Because a work is faulty in some parts, it does not follow as a consequence that it is entirely without value. We do not suppose Mr. Bright wrote as he did intending to deceive the public. That he should have fallen on the same mode of culture as others before him is nothing singular, or more than occurs in every business or profession where knowledge is gained by experiment. That we do not agree with him is no fault of his ; our examinations, investigations, and experiments have shown that to be worthless in practice which he judges correct in principle.

Mr. Bright deserves the thanks of the public for this book for the good there is in it, and because it will lead to an investigation of the positions stated.

(*To be continued.*)

SUNDRIES.—No. III.

BY A BUFFALONIAN.

As you intimate, Mr. Editor, that you are not yet tired of my discursive remarks, I continue them upon the present volume.

The assertion quoted by Mr. Bement, (p. 24,) that "birds never disturb sound cherries," I decidedly disbelieve in. I have had considerable experience, of a rather irritating nature, with the cedar or cherry bird, which is the only one which causes us much annoyance here, and am perfectly satisfied that he, at least, seeks for *cherries*, not *worms*. I have frequently found specimens, otherwise quite sound, depredated upon to a greater or less extent; and when, as is not by any means uncommon, the entire crop of a tree is appropriated by these little robbers, it is hardly to be supposed that a portion at least is not free from worms. I look upon a cherry bird and a burglar with just about an equal amount of consideration, and would as willingly shoot one as the other. [The cat-bird is equally open to this censure.—Ed.]

"Inarching," (25.) Mention is here incidentally made of a double-flowering peach, "six years old," as having "of course" never borne fruit. Is it so rare for this tree to produce fruit? I am aware that most double-flowering fruit-trees are barren, but we had, some years since, a peach of this sort, which, although but three or four feet high, set quite an abundant crop more than once ; I do not think, however, that the fruit ripened. [It is no very uncommon thing for double-flowering Peaches to bear fruit, such as it is.—Ed.]

"Branch-trimmer," (33.) In this we have a good idea very imperfectly developed, as Touchstone might have said, In respect to its being a pruning-*shears*, I like it very well ; but in respect that it is a pruning-*knife*, it is a very vile one. The blade is not only of a form entirely unsuited to its proposed object, but the handle is so disproportionately small as to afford a very insufficient grasp to the operator; a very important point in removing a large branch, or operating for any length of time. I think that an American manufacturer might contrive a much better combination of the two implements; but by wearing at the waist a sheath into which either the shears or the

open knife can be thrust, they may be used separately with far more efficiency and scarcely less convenience than the hybrid under consideration.

"Over-shadowing trees," (35.) That these cause immense injury to garden crops and fruit-trees is so unmistakably true, that it is a great error to allow a poor or indifferent tree to stand in the vicinity of either; a *fine* shade tree is a different affair, and is entitled to respect and indulgence. It is a mere waste of time and money, however, to plant any thing near it and expect the same to grow, for grow it will *not*. On our own premises two or three successive plantings of pears were sacrificed to a large chestnut, before it was finally condemned to the axe. (This is one of the worst, perhaps, in this respect, for its influence is felt at a long distance.) I was quite grieved over its fall, but its value has since been amply repaid in apples and pears produced where none would grow before.

"For Market Purposes," (47.) This article of mine seeming rather out of place here, I may be allowed to remark that it was written in reply to an editorial on the subject, in vol. 13, p. 297.

"Tree-boring Insects," (50.) If the assertion here made that insects attack unhealthy trees only be true, how wonderfully at fault have been cultivators, who were and are accustomed to consider the insect as the cause of the enfeebled condition of the tree, not the consequence of it! Mr. Waterton argues ingeniously in support of his views, and I believe him to be correct to this extent, that insects of any kind prefer attacking a feeble tree to one in vigorous health; but I don't believe that the vigorous trees are never attacked. I am satisfied that the saperda, or apple borer, for instance, does not invariably avoid healthy trees, for I have seen trees in that condition bearing marks of its operations—not many marks, it is true, for if so the tree of course could not continue in a healthy state. Another species of saperda, not many years since, destroyed nearly the whole of the numerous locust-trees in and about this city, as well as in other localities, and they were attacked almost indiscriminately, entire rows of apparently healthy and vigorous trees being utterly ruined, if not killed. So numerous were the insects that in a still evening their operations were distinctly audible at a little distance from the trees, the sound being like that made by an auger in entering timber, though not, of course, quite as loud. This may seem a rather tough story, but it is literally true. Now the mountain-ash is undergoing a somewhat similar visitation, and of the many fine ones about the city, I fear few will escape. Some of the largest are already nearly destroyed.

"The Isabella not a native Grape," (73.) I don't consider Mr. Buckley's argument on this point sufficiently convincing to remove the Isabella from the list of natives; indeed, in the face of all the testimony in favor of its American origin, it would be difficult if not impossible to prove it a Spaniard. I observe that even Mr. B. himself has abandoned his position, and in a late number avowed himself convinced of his error.

"Horticulture in Delaware," (78.) Dr. Norris must certainly have been most remarkably successful, if it is from his own experience that he recommends the Bartlett as "one of the very best pears to grow on the quince stock," and states that its asserted imperfect union with the quince "is entirely fallacious." I have had considerable experience with the Bartlett on the quince, both in the nursery and orchard, and regard it as a perfect waste of time and money to attempt to grow it in that manner. That it will in exceptional cases unite well, and form a fine dwarf, is not to be denied; in-

deed, it will very generally do well for two, three, or even four years, but I am not the only nurseryman who can tell you that it is not at all a difficult matter to go through a row of two-year-old trees, and break off at the bud half of them by a pull not more violent than is frequently given in removing a tree from the nursery ; nor am I the only orchardist who can tell you of dwarfs of four or five years, broken off at the same point by the wind ; indeed, I have even seen that happen in the nursery rows. Other varieties of similar ages unite so firmly with the stock, that their separation is a matter not to be effected without difficulty ; and with some it is much more easy to break the stem at any other point than to disunite the fibres of the pear and quince, so closely and firmly are they bound together.

Surely, then, "the idea of its imperfect junction" is not *quite* "fallacious." For myself, I can see no reason for wishing to dwarf a variety which fruits so early and abundantly as does the Bartlett, except in an occasional instance for a very small garden, where a standard is altogether inadmissible; and I must confess, Mr. Editor, that I read with no little surprise your recommendation of it as one of the best six sorts for dwarf culture, (page 96.) Much disappointment must assuredly result from following unconditionally your advice on this head. [We should be greatly pained to have misled any body ; and yet we have just advised a young friend, who is about planting a dwarf Pear orchard, to plant one-third of it with the Bartlett. If he selects and plants his trees as we directed him, we shall have no fear for the result. We have never lost but two trees.—Ed.]

"The Peach-tree and its Enemies," (118.) Miss Morris has proved, to my satisfaction at least, that the theory of the cause of the yellows, promulgated by her in vol. 4th, p. 502, of your journal, is the correct one. Peach cultivators are under great obligations to her for the careful researches by which she has arrived at her conclusions, and the lucid descriptions by which she makes known their results. Not having the good fortune to inhabit a peach-growing district, my acquaintance with the disease is chiefly theoretical, but I have never seen an explanation of its cause which appeared so conclusively true upon its face, as the one in question. Were cultivators to dig up and burn without remorse all affected trees, I am convinced that the disease would soon be eradicated.

"Small Trees *vs.* Large Ones," (168.) Planting large trees is always a costly, laborious, and uncertain operation ; very successful in a few cases, but in the majority extremely unsatisfactory. I have satisfied myself of the correctness of Mr. Bacon's views on the subject by observations both at home and abroad, and that small trees are generally much the most valuable in after time. I have seen the experiment tried repeatedly, and the result has usually been, that trees planted at two or three years of age outstripped in growth, vigor, and fruitfulness "extra-sized" trees—perhaps ten or more years old—planted nearly at the same time. There are exceptions to this rule, as to most others; and I have planted large trees quite successfully, they continuing to make fine growth, and fruiting immediately and abundantly. Such instances, however, are not common, and are not to be relied upon, for the reverse is most frequently the result.

Were I planting an orchard, I should choose pears and cherries of two years, apples and plums of three or four years' growth, and even dwarf pears I should not wish to plant much older than two years; for, although comparatively easy of removal at a more advanced age, they are apt, unless the

operation is performed with extreme care, to receive a check from which they do not soon recover. The same thing is true with respect to ornamental trees : "extra-sized" evergreens and other shade trees are sought for with avidity every season, more to the benefit of the nurseryman than the planter, for if they grow they are in ten years no larger, and not nearly so handsome, as three- or four-year-old trees planted at the same time.

"Ventilation of Horticultural Houses," (175.) Mr. Chorlton has not yet, it appears, seen fit to change his views upon this subject, and advocates his favorite theory with much vigor and considerable ingenuity. I have no intention of arguing the point with Mr. C., for I have not forgotten the severity with which he "came down upon" a correspondent of your journal last year, who happened to entertain different opinions, and I fear that I might find myself in the same category ; I have nevertheless a statement to make, which I conceive rather militates against this *air-tight* plan of grape-growing. In my vinery—a small lean-to—the upper ventilators are placed in the back wall, and perhaps two feet below the roof, it being impossible, from the arrangement of the building, to place them higher; consequently there is above the openings a stratum of warm, moist, and stagnant air, into which the upper extremities of the vines have for two seasons been immersed. The point where the circulation of air ceases is quite distinctly marked, the vines below that point being strong, healthy, and fruitful, the foliage fine, and the bunches of good size, while above it the shoots are weak, the leaves small, and the fruit does not set. When in pruning the vines I chance to thrust my head into this stratum of stagnant air, the sensation is extremely oppressive and almost suffocating, and this while both lower and upper ventilators are open, and the lower portion of the house quite comfortable. I am convinced that I must contrive a ventilator in the roof, or abandon the idea of obtaining any fruit upon the upper extremities of the vines.

"The Negley Pear," (255.) Mr. Heaver is really deserving of the thanks of all fruit culturists for stating the true character of this fruit. It is a fact not to be controverted, that with most men their *geese* are not only very like *swans*, but their seedling fruits are generally of the highest quality. This is natural enough, perhaps, and is only an innocent weakness, (which I confess myself to be not wholly free from,) unless it is paraded before the public, as is sometimes the case, when it becomes a more serious matter. If every one would resolve to buy no new varieties, either of fruits, flowers, or other products, until they had received the commendation of some competent and reliable body of men, we should have less of this constant and fearful increase of *new* things, many of which have no good point *but* their novelty. But people will continue to produce them as long as the public will buy whatever is offered, as is at present the case. I am not animadverting upon Mr. Negley in particular, but the whole class of novelty raisers and novelty buyers. Mr. N. doubtless is perfectly sincere in his *opinion*, but I for one would much prefer to rely upon the *decision* of the Cincinnati Fruit Committee.

"Mulching," (263.) Prof. Coppock has experimented more extensively and perseveringly in this direction than any one that I know, and I have had frequent opportunities of observing his successes. As I have before said, I don't believe in planting large trees, but I do believe in mulching to the fullest extent ; and when a big tree is to be moved, there is no one thing of so much importance to its future welfare as a substantial *mulch*. I may remark, *en passant*, that the Bartlett tree spoken of by Prof. C. has

this season produced something like a bushel of fruit, a proof not only of the success of the operation, but of the value of the variety, and its early productiveness *as a standard.*

FRUIT STEALING.

BY C. N. BEMENT.

THERE is, unhappily, a very serious objection to cultivating fruit in our villages and suburban gardens; fruit-stealing is a common crime in most parts of this country, and the standard of principle on such subjects is as low as it well can be in our rural communities. Property of this kind is almost without protection among us: there are, to be sure, laws on the subject, but these are seldom or never enforced; and of course people are not willing to throw away money and time and thought to raise fruit for those who might easily raise it for themselves, if they would take the pains to do so. There can be no doubt that this state of things is a very serious obstacle to the cultivation of choice fruit in our villages and towns. Horticulture would be in a much higher condition in this country, if it were not for this evil. But the impunity with which boys, and men too, are allowed to commit thefts of this kind is really, to say the least, a painful picture, for it must inevitably lead to the increase of a spirit of dishonesty throughout the country.

It is the same case with flowers; many people seem to consider them as public property, though cultivated at private expense. It was but a short time since that we saw a little girl, one of the Sunday-scholars, put her hand within the railing of a garden and break off several fine plants, whose growth the owner had probably been watching with care and interest for many weeks, and which had just opened to reward his pains.

Another instance of the same kind, but still more flagrant, was observed last summer: the offender was a full-grown man, dressed in fine broadcloth, too, and evidently a stranger; he passed before a pretty yard, gay with flowers, with which our beautiful city of Poughkeepsie abounds, and, unchecked by a single scruple of good manners or good morals, proceeded to make up a handsome bouquet, without so much as saying "by your leave" to the owner. Having selected the flowers most to his fancy, he arranged them tastefully, and then walked off with a free and jaunty air, and with an expression of satisfaction and self-complacency truly ridiculous under the circumstances. He made up his nosegay with so much pains, eyed it so tenderly as he carried it before him, and moved along with such a very mincing and dainty manner, that he was probably on his way to present himself and his stolen trophy to his sweetheart; and we can only hope that he met with such a reception as was deserved by a man who had been committing petty larceny.

As if to make the chapter complete, the very same afternoon, the city being full of strangers, we saw several young girls, elegantly flounced and crinolined, put their tiny hands through the paling of another garden, facing the street, and help themselves in the same easy manner to their neighbor's prettiest flowers. What would they have thought if some one had stepped

up with a pair of scissors, and cut off a yard or so from the ribbon on their hats, merely because it was pretty, and one had a fancy for it? Neither the little girl in crinoline, nor the stranger in broadcloth, seemed to have learned at common-school, or at Sunday-school, or even at home, that respect for the pleasure of others is simply good manners, regard for the rights of others, and common honesty.

No one who had a flower-border of his own would be likely offend in this way—he would not do so unwittingly, at least; and, if guilty of such an act, it would be premeditated pilfering. When people take pains to cultivate fruits and flowers themselves, they have some idea of their value, which can only be justly measured by the owner's regard for them. And then, moreover, gardening is a civilizing and improving occupation in itself; its influences are all beneficial; it usually makes people more industrious and more amiable. Persuade a careless, indolent man to take an interest in his garden, and his reform has begun. Let an idle woman honestly watch over her flower-beds, and she will naturally become more active. The occupation itself is so engaging, that one commences readily, and the interest increases so naturally, that no great share of perseverance is needed to continue the employment; and thus labor becomes a pleasure, and the dangerous habit of idleness is checked. Of all faults of character, there is not one, perhaps, depending so entirely upon habit as indolence; and nowhere can one learn a lesson of order and diligence more prettily and more pleasantly than from a flower-garden.

Horticulture is not carried on upon a great scale anywhere in this country. We regret that this should be so. A large garden, where taste and knowledge have full scope, is indeed a noble work, full of instruction and delight. The rare trees and plants, brought with toil, and cost, and patience from distant regions; the rich variety of fruits and vegetables; the charming array of flowers, are among the most precious and the most graceful trophies of commerce, and industry, and adventure. Such gardens are, whether public or private, always desirable in a neighborhood. They are among the best gifts of wealth, and scatter abroad too many benefits to deserve the doubtful name of luxury. If we have none near enough to bring good to our own neighborhood, it is at least pleasant to remember that other communities are more fortunate than ourselves. When one can not enjoy some particular good thing one's self, a very little charity, and a very little philosophy, lead one to be glad, at least, that others may profit by it.

A very striking proof of the civilizing effect of large gardens may be seen in the great towns on the continent of Europe. In those old countries, where grounds of this kind have been more or less open to the public for generations, the privilege is never abused by any disgraceful act. The flowers, the fruit, the trees, the statuary, remain untouched, uninjured, year after year; it never seems to occur to the most reckless and abandoned to injure them. The general population of those towns is, in many respects, inferior to our own; but, in this particular point, their tone of civilization rises far above the level of this country.

Pilfering fruit, or destroying the flowers of neighbors, is, to say the least, a disgraceful act; and yet it is quite common in our cities and villages. We suffer from it every season. It is the result, in most cases, we think, of thoughtlessness, and the bad example of older persons.

Our Horticultural Club was formed with a view to the mutual protection

of our fruit—to detect and punish all trespassers and pilferers—and so far it has had a salutary effect.

[Mr. Bement's article is timely. The evil of fruit-stealing is one of great magnitude in the United States, and is yearly increasing. It deters a great many from growing fruit, either for profit or pleasure. We have a friend who destroyed a beautiful young orchard rather than submit to the robbery of his fine pears. We have laws against fruit-stealing in New York, but they are never enforced ; a few examples, we think, would have a salutary influence. Our chief reliance for the abatement of the evil, however, must be the creation of a moral feeling which shall regard fruit-stealing with the same horror as stealing bank notes : there is really no moral difference between them, and both should be punished alike. The "nice young man" alluded to by Mr. Bement we hand over to reprobation ; but what shall we say of the girls ? Sunday-school girls, too ! Surely, Mr. Bement, you did not see girls—— we can not write the word ; we think too much of the girls to believe such things of them. We hope Mr. Bement was mistaken ; his eyes must have deceived him ; or, at most, he saw a ghost ! Was it not so, Mr. Bement ?—Ed.]

MONUMENT TO THE MEMORY OF A. J. DOWNING.

BY WILLIAM HEAVER, CINCINNATI.

When the loss the country had sustained by the untimely death of the talented and distinguished gentleman who first established the Horticulturist was still fresh in the memories of his numerous friends and admirers throughout the United States, it was proposed to erect a monument, to perpetuate his memory, worthy of the name and fame of a man who had done so much for his age and generation, in improving the taste of his countrymen by teaching and showing to them the great beauties of landscape gardening, in developing and bringing out in bold relief the natural beauties of the scenery with which our extended and varied country abounds.

To Downing, more than to any other or all other men, are we indebted for the tasty and improved styles of architecture displayed in the numerous villa residences to be found in the suburbs of all our flourishing towns and cities throughout the length and breadth of the land. What was done for Britain by J. C. Loudon was commenced and carried into successful operation in this country by A. J. Downing, whose memory ought to be revered, not only by every horticulturist, pomologist, or any other admirer of Nature's gifts, but by every philanthropist throughout the whole land.

Scarcely a citizen in the Union, inhabiting a country or suburban residence built within the last ten or fifteen years, but owes a debt of gratitude to the memory of the man through whose talent and exertions he enjoys much solid and substantial comfort, either in the conveniences, or in the beauty of the style of his residence, or in the ornamental adornment and scenery surrounding the same.

The reasons why the contemplated monument was not erected I am not acquainted with, but the subject has recently been brought fresh to my attention by the action of the Cincinnati Horticultural Society, which some time since

received a communication from the directors of the Spring Grove Cemetery Company to the effect, that the company would deed a lot in the cemetery to the Cincinnati Horticultural Society, on condition that the said society erect thereon a monument that would be a durable and lasting ornament to the grounds; the lot to be selected by a joint committee of the company and the society.

Here, it appears to me, is a most appropriate opportunity for the many friends and admirers of the lamented Downing to unite with the Cincinnati Horticultural Society in erecting a monument worthy the cause and the object.

It further appears to me that this is a most appropriate time to carry such a measure into practical operation. The United States Agricultural Association hold their next annual exhibition near Cincinnati; it is expected that the horticultural department will be a prominent feature in the exhibition; it will certainly bring together a very large number of persons who entertain the strongest respect for the memory of our national benefactor, for in such a light do I consider A. J. Downing to stand before his countrymen. But a mere pittance from each individual of the many thousands who are enjoying the benefits of his superior taste and judgment would erect a monument eminently worthy of the object, and stand as a mark to after ages of the appreciative respect in which his memory is held by his contemporaries. That the place in which it is proposed to erect the same is worthy the object, I would invite you, Mr. Editor, and any of your readers to judge; and I hope that no stranger who attends the United States Fair at Cincinnati will fail to visit the Spring Grove Cemetery. Every gentleman of taste—especially of kindred taste—will quickly discover that the talented superintendent, Mr. A. Stranch, is not only a gentleman of enlarged views, but a perfect enthusiast in his profession of landscape gardening. It would sound too much like egotistic flattery to say a tithe of what we think of him; suffice it that we appreciate his abilities.

Should you consider the foregoing thoughts and suggestions of sufficient moment or interest to merit a place in the Horticulturist, you would confer a favor by publishing the same in your September number, and if the project meets with sufficient encouragement it might assume form and shape during the time of the fair so as to be carried to completion.

[We received the above after our September number had gone to press; but in view of its importance we now print it just as it was written. For the "United States Agricultural Association" the reader can substitute the name of his local society, and the subject will then have a wider application. It is certainly due to the genius and labors of Downing that some fitting monument should be erected to his memory. Several movements have been made with this object in view, and, with the exception of the vase at Washington, they have all failed; failed, in our opinion, from want of concerted action; and we fear that Mr. Heaver's will fail for the same reason, notwithstanding all his warmth and love of the subject. A general committee of five men of the right stamp, with power to appoint local committees, collect funds, locate the monument, &c., would doubtless carry the project to a successful issue. We shall very heartily coöperate with any movement having this object in view.—Ed.]

A FEW MORE WORDS ON GRAPE-CULTURE.

BY WILLIAM BRIGHT, PHILADELPHIA.

The communications in the September number of the Horticulturist, touching the question of originality in the system of Grape-culture proposed in my recent work on that subject, may seem to require some reply. So far as my personal interests are concerned, I do not feel that my system needs any defence; but as I believe the plan I suggested is one which will prove of great value to the country, I am unwilling that it should be condemned and put down by writers who misapprehend its nature, or who from any motives desire to place obstacles in the way of its introduction into general use.

The "Review of the Grape Question," by Mr. A. S. uller, is in no respect a correct or fair statement of the matter. The most important error consists in saying, that under my system of vineyard culture there is a "loss of the crop every other year." Let me say once more, that only every other vine is cut down every year, so that half the vines are constantly in fruiting condition; and as I have more than double the usual number of vines on a given space or border, I maintain that as large and valuable a crop of Grapes will be obtained annually by this method as by any other yet practised in this country.

Mr. Fuller attempts to show that the alternate renewal system which I recommend for the vineyard is not new, by quoting from a work by one Miller, published in England in 1731, in which some directions are given for cutting down canes in the *forcing-house*, to give them rest, and to restore the vines after hard forcing. My reply to these quotations is, that they do not relate to common grapery or vineyard culture, nor do they touch the subject of my specific renewal system at all; and it is a most unjust inference to say that the "renewal system of Bright was *in vogue* in England in the beginning of the last century." Every intelligent reader, at all conversant with the subject, will see that this assertion is positively untrue. We often cut down vines to get stronger canes, but this has nothing to do with the method of culture and the general renewal plan proposed in my work.

I now sum up my position thus: I assert that at the time I published my work on Grape-culture, there was not, to my knowledge, in the current horticultural literature of the English language, any recommendation of any such short cane, single stem renewal system, so stopped and pruned, as I have proposed; nor has any such system ever been practised, so far as I know, (and my knowledge of the fact is by no means limited,) in England or America. Mr. Fuller may go back a century or more, and hunt up in some obsolete old work directions about forcing vines every second or third year; or if he should dig long enough he might possibly find, in the ruins of Herculaneum or Pompeii, a vine that had been so treated; but this does not touch the question, whether or not the entire, distinct, and definite system of vine-culture which I present is a new and original one as compared with other systems now or formerly practised or suggested. I believe this to be the best plan of growing grapes that I have ever seen, and I can not submit to have it fobbed off as an old, worn-out, useless idea on such

irrelevant and perverted evidence as that above referred to. The question of originality in this matter is not now personal to myself alone, but a question of importance to the members of the horticultural profession at large, and with them I leave it. If my system is new and valuable, the public ought not to be fogged with false testimony, nor will I permit it to be done if I can help it.

Mr. Fuller sneers at my selling a Grape Fertilizer for so much per ton. If Mr. F. belonged to the Lord Hyacinth and Charles Yellowplush class of literary fops who esteem it fine manners to turn up their noses at all matters connected with trade, I should not be surprised at the attempt to underrate me, nor would I notice it; but coming from a laboring, trading member of our craft, I can not refrain from turning back this sarcasm with the simple remark, (penned in a spirit of infinite mercy,) that it is unworthy of its inventor.

The communication from Dr. Benson demands a brief and courteous notice. The writer presents good evidence to show that inside borders for the vinery were suggested by Loudon and Johnson, and an inside divided border by Hoare. I do not suppose that I am entitled to much consideration for my proposed improvements in vine borders, but so far as the question of originality is concerned, the quotations made by Dr. B. do not cover my plan. My new border is not only inside and divided, but it is *detached* from the front wall and from the floor of the house by a four-inch flue or air-conductor. Hoare's "hollow wall" (very common in England) is not a positive detachment of the border from the wall, and will not successfully protect the border from frost. My border I still believe to be new in one of its leading and most valuable features.

In the detached border, entirely inside the house, the vines are perfectly protected against changes of weather at all seasons. They can be kept back, in a cold vinery, as long as may be desired in spring, so as to avoid late frosts; they may be ripened off early in the fall by withholding water; and when a crop of grapes has been matured the fruit may be kept upon the vines for weeks and months in a state of great perfection, while open vines, planted in a border partly outside, can scarcely be preserved, in a rainy season, for a week, even if they should be ripened successfully. A detached inside border will preserve grapes as effectually as if the vines were planted in pots with outside borders. I have known cases where hundreds of pounds of grapes, grown at much expense under glass, for private use, have ripened imperfectly in wet seasons, and rotted and fallen off so rapidly that the whole crop was in danger of being lost within the limits of two weeks; and the grapes, being unfit for market, had to be converted into bad wine to save them from utter waste. With inside detached borders, no such accidents can happen. Neither rain nor frost can ever affect such borders. The temperature and moisture of the roots are entirely under control, and the advantages to be derived from these circumstances are too obvious and important to need further comment.

The experience of the last season with the single stem renewal system in the vineyard and grapery but confirms my former opinion of its merits. The economy, certainty, and neatness of the system more than satisfy my mind as to the practical value of the plan. In working on a large scale in the vineyard I have made a few improvements in the management of the vines. For instance, during the period of greatest growth in June, we let

the laterals run to three or four joints, or even six or eight, without stopping, as carefully as in pot-vine culture, for two reasons: first, to prevent bursting the main eyes; and second, because it saves time and labor. Again, when we do stop the laterals after making several joints, instead of pinching the tips we break them off in the middle of a joint, just where a new leaf or lateral is starting, taking off several joints at once, instead of doing this by pinching at several operations. No bleeding takes place, and only a temporary check is given to the lateral. So of the top of the cane. After pinching once at the height of five or six feet, (the top of the trellis,) we let the top lateral or main cane run pretty freely, and then break it back two, three, or half a dozen joints, as may be necessary, to keep it within convenient limits. The same plan I have adopted, this year for the first time, in pot-vine culture, and with canes in the grapery, breaking the tops back roughly, two, three, or half a dozen joints at pleasure, to a lateral or main bud, which is freely starting. After one or two such shortenings of the main cane, you get two or three laterals or main buds at the top in a freely-growing state to serve as safety-valves to the ascending sap, thus preserving all the lower buds with certainty, and preventing an inconvenient, injurious, and unsightly extension of the cane. By the last of August the growth of the vines becomes more moderate, the wood begins to ripen, and we then remove the laterals almost entirely from the four or five lowest joints, and shorten all the upper laterals to two, three, or four joints, according to their freshness or ripeness. The labor of dressing the vineyard after this plan is comparatively trifling, and perfectly simple when once understood. Any intelligent boy, fifteen years of age, can do the work. I feel confident that this system of Grape-culture will be very generally admired and adopted when its merits become known. A personal examination of it in the field is, however, vastly more instructive than any written explanations. I intend to have the whole matter carefully examined and reported upon, by competent authorities, as soon as I can show an acre or two of vineyard and several graperies on this plan in full bearing, which will be very soon.

[We shall be glad to have this subject discussed so long as it can be done profitably, and without the indulgence of personal ill-feeling. Both parties, however, have had a pretty sharp rap at each other, and we propose to have them shake hands and discuss the subject in a friendly way, and forbear calling each other's motives in question. He who keeps cool generally makes the best argument. When the debate is closed we propose to sum up.—Ed.]

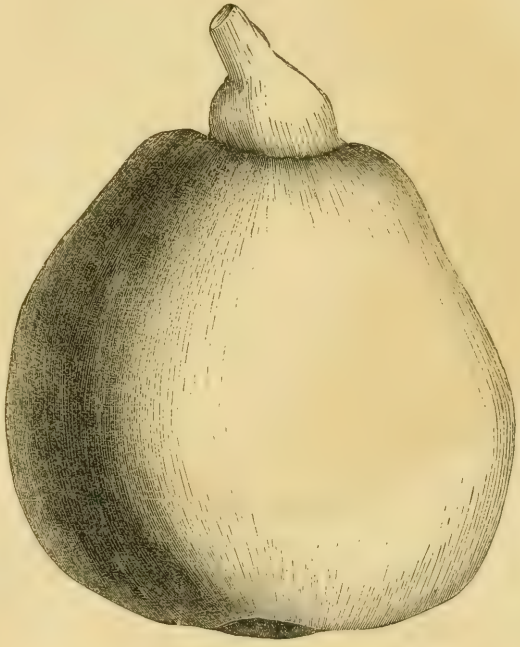
THE BARTLETT STRAWBERRY.

BY THE EDITOR.

[See Frontispiece.]

We present this month, for a *Frontispiece*, a drawing of the Bartlett Strawberry. The truss was taken almost at random from a bed three years old, and may be relied upon as a fair representation of the fruit; it is by no means overdone. It has been grown several years in this vicinity, and

we have had good opportunities of testing it. It is not much behind the Wilson in productiveness, but is decidedly superior to that variety in quality. We have no doubt that it will prove, in most localities, a valuable market fruit. The flower stalks are stout, and stand well up. The leaves are of a dark green, of good substance, and bear the sun well. The following is our description. *Fruit* large, obtusely conical. *Color* dark crimson. *Seed* brown, slightly imbedded. *Flesh* red, firm, juicy, slightly acid, with a rich flavor. *Calyx* large, many parted, and persistent. *Flowers* staminate. It originated with Mr. A. S. Fuller, of Brooklyn.

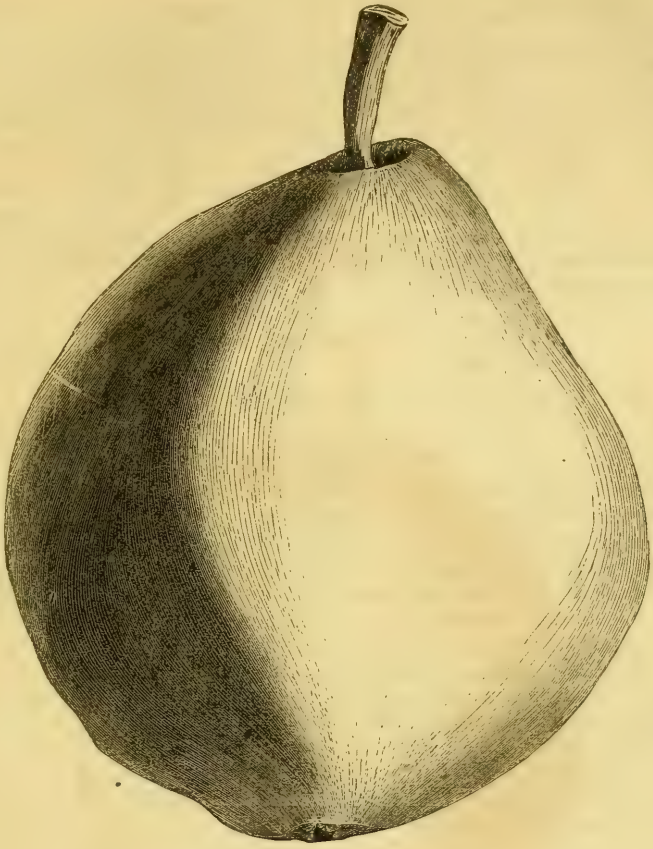


A SECKEL PEAR GROWN SOUTH.

NORTH CAROLINA PEARS.

BY THE EDITOR.

This old state has generally been esteemed as fit only to produce "tar and turpentine;" but she is now about to redeem herself, and we take the opportunity of giving her a good position in the pomological world, or at



A BARTLETT PEAR GROWN SOUTH.

least that part of her known as Clinton ; the other parts, we hope, will follow in quick succession. We know of no man who, during the past twelve years, has had greater opportunities of testing fruit from all sections of the country than we have had, except, perhaps, our good old friend, Charles Downing ; and we state deliberately, that the best pears we have ever eaten were those recently sent us by Dr. Bizzell, of Clinton, N. C. The Seckel, of which we here give a portrait, it will be perceived, is out of shape, but it was very large, fine grained, juicy, melting, and exquisitely aromatic, including even the nipple, which looks odd enough on a Seckel Pear ; but there is no mistake about it. The Bartlett, too, is large and out of shape ; and for this reason, and because it is the best one we have ever eaten, we give a portrait of it. The White Doyenné, too, was very large and very fine ; the same remark will also apply to the Washington, a pear not

appreciated as much as it deserves. The Duchesse de Berri was of great size, but excessively gritty, and not to be compared to the other specimens.

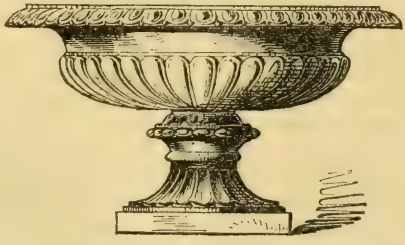
We thank Dr. Bizzell for these fine pears, and should be pleased to have him tell us the age of the trees, whether the fruit was thinned out, the nature of the soil, height above tide water, pruning, etc., etc. Here, Dr., is another chance for you to do some good in the world.

It may be well to state here, that this box of fruit was received in admirable condition, being packed in dry bran. Most of the fruit that we receive from the South is packed in cotton, and when the box is opened it often smokes like a furnace, and the fruit is much injured, being frequently entirely decomposed. Cotton is about the worst thing that can be used in sending fruit from the South.

PAWLONIA IMPERIALIS.

BY M. W. PHILIPS, EDWARDS, MISS.

Some three to five years ago I was at a neighbor's spending the day, and a hot day it was ; some remark about trees called to mind a new tree growing in cultivated land. To him, the like had never been seen ; he supposed it a tree from the tropics, and the seed dropped by wild geese, in passing over, or by some other strange way. His description so influenced me, that I begged to see it. We walked—it seemed nearly two miles—most of the way through fields ; oh! it was hot to me that day. I told him it was the Pawlonia, and the seed got there from my house. He could not think I had the tree, as he had never seen one ; he a colonel *by brevet*. On account of his being a very wealthy man I assured him it was true. Therefore, this tree bloomed before three years ago. I think I remember distinctly of its blooming at a brother's house before he moved, say eight years ago, and he procured his from me. I feel certain the Pawlonia bloomed over ten years ago. So much for a " marked coincidence."



EDITORS TABLE

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, &c., intended for the perusal of the Editor, and packages by Express, should be directed to the care of C. M. Saxton, 25 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."

FRUIT RECEIVED.—From Dr. Grant two boxes of fine pears, containing Dearborn's Seedling, Rostiezer, Beurré Giffard, Bartlett, Belle Lucrative, Flemish Beauty, Tyson, &c., &c., the Tyson of great size and beauty. From Mr. Field, specimens of Belle Lucrative, Flemish Beauty, Duchesse d'Angoulême, Louise Bonne de Jersey, &c. From Mr. Campbell, of Delaware, very fine specimens of the Delaware Grape. From Ellwanger and Barry, handsome specimens of Sheldon, Beurré Superfin, Lodge, Church, Kingsessing, Doyenné Rose, Gansell's Bergamotte, &c. From Mr. Coit, splendid Peaches grown on trees in pots. These gentlemen, and others elsewhere named, will please accept our thanks.

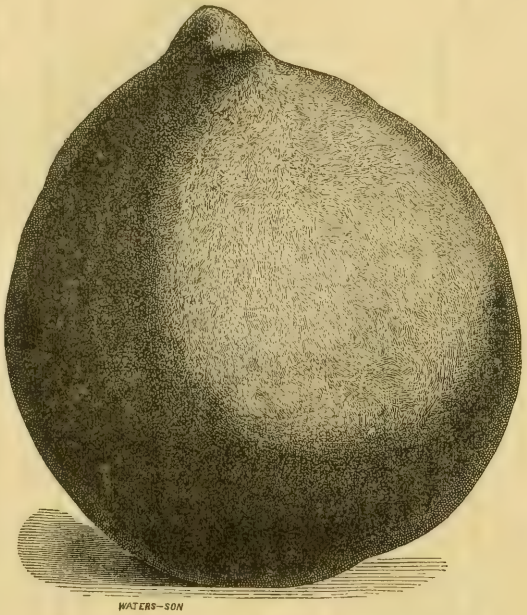
COPY LOST.—Our boy last month lost some of our best "table" matter while on the way to the printer's, and we did not discover it till too late to supply it again, which in some cases would not have been possible. It contained notices of Horticultural shows, acknowledgments for tickets, &c., received, and other matters; all which our readers will please consider as having been properly said.

FAIR OF THE AMERICAN INSTITUTE.—The thirty-second Annual Fair of the American Institute will open at Palace Garden, New York, on the 25th of September, and continue two weeks. The fair this year will be confined to Agricultural and Horticultural productions. The prize list, though somewhat wanting in discrimination, is a very liberal one, and ought to secure a grand exhibition. We bespeak for it the attention of all engaged in horticultural pursuits. We are to have a *princely* ball; let us also have a princely show of fruits and flowers.

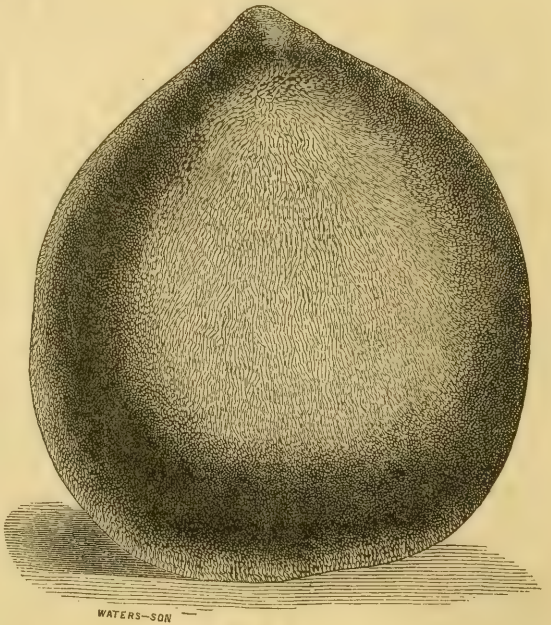
MAPES'S DWARF PEAR ORCHARD.—We recently took a hasty look at Mr. Mapes's pear orchard, and were much pleased with the healthy condition of the trees and the quantity of fruit they bore. With him dwarf pears are a success, and pay. The leading kinds are Duchesse d'Angoulême and Louise Bonne de Jersey.

PEARS FROM MIDDLE HADDAM.—We are indebted to Mr. Stewart for a box of Pears of fair size and appearance, but medium quality, which we take to be the Muskingum. This pear was with our lost copy last month.

HYACINTHS, ETC.—Messrs. Thorburn & Co. will please accept our thanks for a choice assortment of Hyacinths, Narcissus, Nerines, etc., all sound and beautiful bulbs, such as may always be found at their store.



LINCOLN CLING.



HUNTER'S FAVORITE.

SOUTHERN PEACHES.—We are indebted to Dr. Hunter, of Lincoln, N. C., for specimens of very fine peaches, named *Lincoln Cling* and *Hunter's Favorite*. We present drawings of both, not only as portraits, but also as specimens of *photographic* engraving, a new application of the art. Both varieties have a nipple, which is most prominent in the Cling. The latter is large, with a well-marked suture extending through the nipple; color yellow, with a crimson cheek; stone medium. It has a spicy flavor. Hunter's Favorite is a freestone of good size, yellow color, with a beautiful crimson cheek; suture not prominent; stone small. It is juicy and sweet, with a fine spicy flavor. We like the Favorite much better than the Cling.

MORRISANIA HORTICULTURAL SOCIETY.—The annual exhibition will be held on the 3d and 4th of October. We hope they may have a good time of it.

DUNN'S MARKING PENCILS.—The Messrs. Thorburn have received these pencils, and offer them for fifty cents each, including, we believe, a box of leads, in addition to the lead the case already contains.

THE HORTICULTURIST FOR 1861.—We shall next month present some strong inducements for exertion on the part of our friends to increase our subscription list. Meanwhile, we beg them not to be idle. The magazine is worthy, in our opinion, of a generous support, and we aim to add not less than ten thousand to our present list. Our old friends will stick to us, of course.

EXTRACT OF CIDER.—We received a bottle of cider from Messrs. N. Newman & Son, Goshen, Orange Co., under this name, about a year old, which we found to be sweet and very good. He makes it by a peculiar process, and makes it well.

SUBSTITUTE FOR THE GISHURST COMPOUND.—Mr. Brush, of Detroit, in a letter to Mr. Saxton, remarks: "Much is said in the HORTICULTURIST about the virtue of the Gishurst Compound as an insect-killer. If you will suggest to Mr. Mead to mix half a fluid ounce of spirits of turpentine with two ounces (by weight) of whale-oil soap, and dissolve this mixture in a gallon of water, he will have pretty much the same thing as the English compound, and at very little expense. I have tried both these compounds, and do not perceive any difference in their effects. The English compound is composed, I think, of hard soap, turpentine, and sulphur. The sulphur is of no value, and one soap is as good as another, if it be of equal strength. It is necessary to mix the turpentine and soap thoroughly before adding the water, otherwise the turpentine will float, and wherever it touches a leaf will destroy it."—This is a valuable suggestion, for which we desire to return Mr. Brush our thanks. We, however, are inclined to believe that the sulphur plays an important part in some of the applications of the Compound. We shall make up the receipt without and with the sulphur, working in the latter before adding the water. The new mixture should be called the "Brush Compound," and we hope it may prove effectual in brushing away all our plant enemies.

CREVELING GRAPE.—We are indebted to Mr. Goodwin, of Kingston, Pa., for a box of the Creveling Grape, elsewhere described.

NEW HYACINTH GLASS.—Mr. Bliss has left on our table a new Hyacinth glass of beautiful form, with Tye's registered flower support attached. The reader will get a good idea of it by referring to our advertising columns. It is the most elegant thing of the kind we have yet seen. The support can be taken out, and the glass used for Bouquets, &c.; it is also quite ornamental, and may find a place in any parlor.

A CORRECTION.—In Mr. Fuller's article of last month, p. 439, line 3 from top, for "can not" read "can." The correction was made in the proof, but the printer overlooked it, with some others.

HAMBURGH AND MUSCAT GRAPES.—We have to thank Mr. Mullen, gardener to R. H. Winslow, Esq., for very large and splendid bunches of Black Hamburgh and Muscat of Alexandria Grapes. The Muscats were beautifully ripened, and delicious.

SEEDLING PLUMS.—We received from Mr. Reagles a Seedling Plum resembling the Washington in quality, and of which we think so favorably that we should desire to give it a further trial.—We also received from Mr. Wilson, of Albany, another seedling, named "Herbert's Seedling," said to be very productive. These specimens did not ripen kindly, remaining somewhat hard and harsh until they began to decay; and we should hesitate, under these circumstances, to say whether it was an acquisition or not.

SEEDLING VERBENAS.—Mr. Snow has sent us trusses of two exceedingly fine seedling Verbenas, named Snow's Superb and Garibaldi. We are so much pleased with them that we should have been still more so if he had not detached the trusses from the plants. Only think of that, Mr. Snow.

THE ATLANTIC MONTHLY.—The September number is quite up to the mark. Contents: Among the Trees—Victor and Jacqueline—On a Magnolia Flower—Some Notes on Shakespeare—The Great Arm Chair—The Song of Fatima—Something about History—My Neighbor, the Prophet—The Pilot's Story—A Day with the Dead—Culture—The Children's Hour—Three Mile Cross—The Professor's Story—Reviews and Literary Notices.

THE GENESEE FARMER.—We perceive by the September number of the *Farmer*, that Mr. Harris proposes to give it away next year—almost. The three remaining numbers for 1860 will be sent *free*, and fifty cents inclosed to Joseph Harris, at Rochester will secure the paper for 1861! That, certainly, is cheap enough for a good agricultural journal.

WE find that President Wilder's Address has not been put in type, as well as some notes of ours on Mr. Dundas's place, Bright's Nursery, and other Philadelphia matters. Our own remarks can very well go over for a month, but we regret to have the Address do so. We are too much behind, however, to stop longer.

CATALOGUES AND BOOKS RECEIVED.

Premium List and Regulations of the Twelfth Annual Fair of the Washtenah County Agricultural and Horticultural Society, to be held at Ann Arbor, Mich., Oct. 10th, 11th, and 12th, 1860.

The Journal of Rational Medicine. Edited by C. H. Cleaveland, M. D. September, 1860. Cincinnati, P. C. Browne.

The Mother's Magazine and Family Circle. Rev. B. J. Relyea, Editor and Proprietor. New York, 397 Broadway.

The Journal of the Lebanon Agricultural Society. Annual Exhibition in Smith's Valley, Oct. 10th and 11th, 1860.

Henry A. Dreer's Select List of Bulbous Flower Roots, for sale at his Seed and Horticultural Warehouse, 337 Chestnut Street, Philadelphia.

Descriptive List of Hardy Native Grape-vines, cultivated and for sale by Geo. W. Campbell, Delaware, Ohio.—A very neat descriptive catalogue.

Ravenswood Fruit Garden and Nursery Trade Circular, by H. C. Freeman, Ravenswood, L. I.

Catalogue of Dutch Bulbous Roots, imported and for sale by McIlvain & Young, No. 9 John Street, N. Y.

Descriptive Annual Catalogue of Bulbs and other Flowering Roots, with directions for their

Culture and Management, offered by J. M. Thorburn & Co., 15 John Street, New York.—A varied and choice assortment.

Native Evergreen and Deciduous Trees, for sale by Ramsey & Bell, Elmwood Nurseries, Portland, Maine.

Wholesale Price List for the Fall of 1860 and Spring of 1861, of Fruit-Trees, &c., cultivated and for sale by William Reid, Elizabethtown, N. J.—Mr. Reid keeps none but the best things.

Wholesale Catalogue of Trees, Shrubs, and Plants, cultivated and for sale at the Great Valley Nursery, for the Fall of 1860 and Spring of 1861. By S. T. Kelsey & Co., Great Valley, N. Y.

Seneca Lake Highland Nurseries. E. C. Frost, Proprietor, Havana, Schuler County, N. Y. Wholesale Catalogue for Nurserymen and Dealers in Fruit, Ornamental Trees, Stocks, Seeds, Pits, &c., for the Fall of 1860 and Spring of 1861.

Descriptive Catalogue for 1860–61, of Fruit and Ornamental Trees, Shrub, Vines, &c., cultivated and for sale by James Edgarton, at the Sugar Grove Nurseries, Barnville, Ohio.

Transon-Forteau et Sons' Nurseries, Orleans, (France.) P. and E. Transon, Successors. Trade List for 1860–61.—This Catalogue is intended to meet the wants of the American market.

Circular to Grape Growers, by J. D. Ingersoll, Ilion, Herkimer Co., N. Y.

Bridgeman's Descriptive Catalogue, No. 7. Bulbous and Tuberous Roots. Andrew Bridgeman, 878 Broadway, N. Y.—A very full assortment of Hyacinths, Tulips, Narcissus, &c., and at very moderate prices.

Descriptive Catalogue (for 1860–61) of Fruit and Ornamental Trees, &c., cultivated and for sale by Peters, Harden, & Co., at "Downing Hill Nursery," Atlanta, Ga.

Correspondence.

MR. EDITOR:—DEAR SIR: In the last number of the HORTICULTURIST I notice your remarks, as well as those of your correspondent Foxmeadow, in praise of the Gishurst Compound for destroying insects and mildew; and, as you seem desirous of getting at its real merits, for your information, as well as the readers of your valuable Journal, allow me to inform you that I have not, up to this date, heard from nor seen any of my customers who have purchased the compound from me who have one word to say against it, but, on the contrary, in its praise; and, as a proof of what I say, I subjoin the note which I received from W. O. Van Tyne, Esq., Cleveland, Ohio. "W. Elliott:—Dear Sir: I inclose six dollars for more of your Gishurst Compound. I am very much pleased with it, and find that it completely protects my dwarf Pears, Peaches, and Grapes, from all kinds of insects which have made their appearance this spring." Thus far, I can furnish abundance of evidence of a similar character from the mostdistinguished Horticulturists in the neighborhood of New York, but as you are in daily communication with those gentlemen I don't think it necessary to furnish ou with the evidence.

Yours respectfully, W. ELLIOTT, 31 John Street.

[All the persons you allude to bear testimony in its favor.—ED.]

MR. PETER B. MEAD:—DEAR SIR: I send you to-day *via* Savannah, care of Adams' Express, a small box of Pears as a continuation of samples. No. 4 is the Crassanne, a regular and abundant bearer, thriving only on the pear root. The fruit is smaller than ordinary, owing to the prolonged drought from which we are suffering. You will probably judge of its qualities for yourself if they ripen properly, which it will generally do, like the Bartlett, if plucked after

half grown. It is very juicy and vinous, but with a little astringency, just about enough to leave the mouth clean, and free from any unpleasant taste. The fruit requires to be thinned, as it generally sets two or three on a spur, one being quite enough to be left to attain a proper size. It is liable to crack badly sometimes, but seems perfect though small this season, when even the Bartlett, Louise Bonne, and Grey Doyenné are very knotty. No. 32 was sent me from Milan as the Verte Longue Panachée, but I can not see where it is "long" at all. The larger samples are from a small tree on quince root where I could thin out the fruit, while the smaller ones are from a large tree on pear root, too large for me, without more trouble than I was willing to take, to thin out: both of the same age. These are about as good illustrations of the two different plans, thinning and not thinning, as could well be shown. No. 101 was sent me from Paris as the Fondante des Charneuse, synonym, according to Charles Downing, of the "Duc de Brabant." I have only one tree, which is on pear root, and it did not begin to bear very early, but now bears regularly and too abundantly. If the samples, which are hardly as large as usual, should ripen, you will judge for yourself of its merits. No. 151 is the Louise Bonne d'Avranches or de Jersey, with which I have no doubt you are well acquainted. I will merely remark that although the fruit is full-sized this season, it is knotty. No. 179 was sent me by A. Leroy as the Vicompte de Spoelberg. I regrafted it upon an old pear root, where it bears *excessively*, requiring about nine-tenths of the fruit to be thinned off in order for it to attain any decent size. These are rather below the usual size, and as I hope they will ripen well, they will speak for themselves. What is No. 74? I received it from Paris as the Jalousie de Fontenay Vendée, which it can not well be. It bears regularly and always sets too much fruit, but when ripe, though not first rate, is not to be despised. It is when ripe quite solid, though not hard or juicy, but of very pleasant flavor, of which you can judge for yourself, as it will most probably ripen, not being apt to rot. The Beurré Diel fills the gap between the Bartletts, White and Grey Doyennés, and these Pears. It succeeds with me much better than the Duchesse d'Angoulême, and is a much finer fruit, and little, if any, smaller, bearing much better upon the quince root than the pear.

I have filled up the box with small pears instead of straw or paper, therefore do not mistake them for samples, unless poor ones. The Henry IVth is also in season, but so very small, knotty, and ugly that I would be ashamed to let you see any of them, although they eat tolerably well. I have also thrown in a few Jujube berries, which you will find to grow very fast in favor if they reach you in condition good enough for you to eat them. The tree is well worth being cultivated generally at the South, being quite hardy and ornamental, besides furnishing excellent Bee-pasture for about one month, at a scant season, and excellent fruit for children.

Yours respectfully, ROBERT CHISHOLM.

[The last lot of Pears came to hand in better condition than former ones. We thank you very heartily for the opportunities you have afforded us for comparing your South Carolina fruit with our own. Yours have not suffered by the comparison thus far; but as you have kindly proposed to go through the season, we defer summing up till the end. The Crassanne were of good size, juicy, with a vinous flavor, a little gritty, and astringent under the skin. No. 32 is the Verte Longue Panachée; we find that nearly all Pears assume a globular shape at the South. The specimens from the quince were large and good; the others poor. The Duc de Brabant was above our average size, and very fine. Louise Bonne de Jersey had decayed, which we regretted deeply, as we had a great desire to test it as grown South. Vicompte de Spoelberg were of fair size, but only moderately good. No. 74 we take to be the Spanish Bon Chrieten; it is not the Jalousie de Fontenay Vendée, and it is a rather poor pear, being sweet, but coarse and without flavor. The Jujube berries were not quite dried up, but were very pleasant. We should be glad to have you, by and by, give us some remarks on your soil and culture.—ED.]

HORTICULTURAL SOCIETIES.

Brooklyn Horticultural Society.—Just as we are putting our last form to press the Brooklyn Society is in the midst of its fall exhibition. Their new room at Montague Hall is not, in some respects, as good as their old one at the Athenæum, but it is somewhat larger: the ceiling is too low, and the room too narrow. We hope next year to see them at the Academy of Music. The President has been unwearied in his exertions, and is rewarded by a remarkably fine exhibition. We have only time at present to notice some of the leading features. The collection of fruit was a very choice one. The samples of Apples and Pears from Messrs. Ellwanger & Barry, Briggs, Sprunt, Gordon, Ryan & Co., Marx, Quin, Field, and others, were exceedingly fine. Foreign Grapes were shown in quantity, bunches and berries both being large and fine: this part of the exhibition, indeed, was an advance upon any thing the Society has yet had. The season was too early to see a fine show of native grapes, the Delaware and Hartford being almost the only two kinds in condition to eat, except some grown under glass, which, strangely enough, were put in competition with those grown in the open air. There were two large fruit baskets admirably arranged; they would have been still better had they been smaller. Among the exhibiters of Grapes were Messrs. Cowan, Mullen, Egan, Schmeig, Fuller, Merrit.

The display of Pot Plants was very choice. The leading feature in this department consisted of variegated leaved plants, such as Caladiums, Begonias, Crotons, Marantas, Ananassas, etc. Another striking feature was a large number of Bilbergias in bloom, distributed through the room; and still another, very large and fine specimen of Ferns and Lycopodiums. Here and there in collections might be seen a new or rare plant, which we can now only allude to; but we must not forget one very attractive object, a couple of leaves and a flower of the grand Victoria regia, presented by James Dundas, Esq., of Philadelphia.

The cut flowers were not as numerous as on some former occasions, but they were quite unexceptionable, especially the miscellaneous show of Mr. Weir and Mr. Humphrey, the Roses of Messrs. Dailledouze & Zeller and M. Donadi, the fine Verbenas of Peter Henderson, the splendid specimen Dahlias of Mr. Richardson and the collection of Mr. Veitch, as well as those of Messrs. Brenner, Poynter, and others. The display of Bouquets, Baskets, etc., was very pretty and attractive; we think the effect would have been enhanced by placing the circular table under the dome. But our printer is waiting, and we can only say in conclusion that the exhibition was a highly creditable and successful one, and will be remembered with pride. There were a great number of choice and beautiful objects in the room, which were highly appreciated; but we hope the members will not impeach our taste when we say that the President of the Society presented one of the loveliest of them all.

In conclusion, we give a condensed list of the prizes.

First Prizes.—Ellwanger & Barry, Rochester, for best collection of Pears, $15; for best collection of Plums, $5; for best collection of Apples, $10.—James Cowan, Glen Cove, for best 6 bunches of Foreign Grapes, $10; for best 3 bunches of Foreign Grapes, $5; for best 6 bunches of Native Grapes, 2 varieties, $4; (these were manifestly grown under glass, and we are surprised that the judges should have admitted them to competition with out-door grapes.) —John Egan, New Brighton, for best 2 bunches of White Grapes, $4; for best 3 bunches of Native Grapes, $2.—Chris. Schmeig, gardener to J. Rogers, Esq., for best 2 bunches of Black Grapes, $4.—A. S. Fuller, agent for Dr. Grant, for best collection of Native Grapes, $5.—Thomas Sprunt, Throgg's Neck, for best 12 varieties of Pears, $6.—Alexander Gordon, gardener to E. Hoyt, Esq., Astoria, for best 6 varieties of Pears, $3; for best Orchid, $3; for best 6 Ornamental Leaved Plants, $5.—H. Tanner, gardener to J. S. T. Stranahan, Esq., Brooklyn, for best 2 dishes of Peaches, $3; for best dish of Plums, $3.—J. J. Cox, Brooklyn, for best Nectarines, $3.—A. M. Huggins, gardener to C. Stanton, Esq., for best 12 Quinces, $2.—W. J. Reddy, gardener to Mrs. Packer, Brooklyn, for best dish of Figs, $3; for best basket of Fruit, $8.—I. Leonard, gardener to H. A. Perry, Esq., for best 2 Muskmelons, $2; for best display of Vegetables, $8.—Louis Menand, Albany, for best collection of Plants, $15; for best 4 Plants in bloom, $6; for best single specimen Plant, $3; for the best collection of Ferns, $5; best labelling of Plants, $3.—Geo. Hamlyn, gardener to W. C. Langley, Esq., for best single Plant in bloom, $3.—John Humphries, Brooklyn, for best 4 Achimenes, $3.—James

Weir, Sen., Bay Ridge, for the best display of Cut Flowers, $8.—Dailledouze & Zeller, Brooklyn, best display of Roses, $5; best 12 Roses, $5.—Robert Veitch, New Haven, best display of Dahlias, $8.—Andrew Richardson, Fordham, for best 18 named Dahlias, $4; for best 12 named Dahlias, $3; for best Cut Dahlias, $2.—Peter Henderson, Jersey City, for best collection of named Verbenas, $2.—James Weir, Jr., for best Parlor Bouquet, $4; for best basket of Wild Flowers, $3.—Walter Park, Brooklyn, best Hand Bouquets, $4.—Henry Hudson, Brooklyn, best Floral Design.—Philip Zeh, gardener to A. A Low, Esq., for best basket of flowers, $4.

Second Prizes.—R. Mullen, gardener to R. H. Winslow, Esq., Westport, Ct., for 6 bunches of Foreign Grapes, $6; for 2 bunches of White Grapes, $2.—John Egan, for 3 bunches of Grapes, $3; for 2 bunches of Black Grapes, $2.—Thomas Templeton, for 6 bunches of Native Grapes, $2; for 3 bunches of Native Grapes, $1.—B. O'Melia, gardener to Isaac Merrit, Esq., Hart's Village, for collection of Native Grapes, $3.—Jeremiah Briggs, Jamaica, for collection of Pears, $10.—Alexander Gordon, for 12 varieties of Pears, $4; for single specimen Plant in bloom, $2.—G. Marx, Astoria, for 6 varieties of Pears, $2.—C. J. Ryan & Co., Rochester, for collection of Apples, $6.—Wm. Huggins, gardener to C. Stanton, Esq., for Peaches, $2; for Plums, $2.—H. Tanner, for 12 Quinces, $1.—A. A. Degrauw, Jamaica, for 2 Muskmelons, $1.—Geo. Hamlyn, for collection of Plants, $10; for single specimen Plant, $2; for collection of Ferns, $3; for labelling of Plants, $2.—L. Menand, for 6 Ornamental Leaved Plants, $3.—John Humphreys, for Cut Flowers, $5.—M. Donadi, Astoria, for display of Roses, $3; for 12 varieties of Roses, $3; for display of Dahlias, $5.—Peter Brunner, Orange, N. J., for 18 named Dahlias, $3; for 12 named Dahlias, $2.—C. S. Pell, New York Orphan Asylum, for 6 named Dahlias, $1.—Wm. Poynter & Co., for collection of Verbenas, $1. James Weir, Sen., for Parlor Bouquet, $2; for basket of flowers, $3.—Thomas Templeton, for pair of Hand Bouquets, $3.—James Weir, Jr., for basket of Wild Flowers, $2.—Mrs. A. Henderson, for floral design.—Philip Zeh, for basket of fruit, $5.—John McGowan, gardener to H. A. Kent, Esq., for display of vegetables, $6.

Third Prizes.—Chevalier & Petit, for Hand Bouquets, $2.—Wm. Poynter & Co., for basket of flowers, $2.—A. A. Degrauw, for display of vegetables, $4.

THE AMERICAN POMOLOGICAL SOCIETY.—The eighth biennial session of this Society opened at Philadelphia on the 11th of September, and continued three days. The morning session was occupied chiefly in organizing, and appointing a nominating committee. In the afternoon, the President, Marshall P. Wilder, Esq., delivered his address, the principal part of which will be found elsewhere. At the close of the address the nominating committee reported, and the officers were elected. *President*, M. P. Wilder, of Boston. *Treasurer*, T. P. James, of Philadelphia. *Secretary*, Thomas W. Field, of Brooklyn, L. I. We endeavored to get an official list of the officers and standing committees, but failed to do so.

The session just closed lost some of its interest from the fact that the *list for general cultivation* was not touched, the President having recommended that the duty of revising this list should be referred to special and local committees, to report at the next meeting. This we regard as the most important step yet taken by the Society. If these committees shall faithfully perform their duties, something will at last have been done worthy of a national Pomological Society. We purpose helping these gentlemen a little by and by. Their labors will be of the most onerous kind, but we hope they will not flinch from them.

The discussions which followed were rambling and discursive, but some interesting facts were brought out. We find it necessary to condense our reporter's remarks.

An amendment was made to the Constitution, reducing the life-membership fee from twenty to ten dollars. The discussions were then begun, the first in order being the *Apple*. It will be remembered that the list for general cultivation was not brought up at any time, the discussion being confined to varieties which *promise well*. The leading members having expressed their opinions, the following were added to the list of apples which promise well: Summer Sweet Paradise, Canon Pearmain, Fall Wine, Early Joe, Willow Twig, Limber Twig, Bonum, Stansill, White Pippin, Pryor's Red, Keswick Codlin, Rawles' Jeanette, Maiden's Blush, Pomme Royal, Summer Queen.

The *Currant* was next taken up, and a warm discussion ensued in regard to the merits of the Cherry. Messrs. Wilder, Downing, Hovey, Lawton, and others spoke of it as being excessively

acid, and destitute of flavor; while Messrs. Barry, Hooker, Warder, and others spoke in its favor; and it was finally left on the list, to which were added the Versailles, Fertile d'Angers, and Imperial Jaune, a new French variety.

Strawberries were next taken up, and an interesting discussion followed, in which the opinion was expressed that a distinction should be made between the foreign varieties; that while those from England had almost invariably proved ill adapted to our climate, those from France and Belgium had, on the contrary, proved very promising, as instances of which the Triomphe de Gand and others were mentioned. The Triomphe de Gand was spoken well of by every body, and this and Jenny Lind were added to the list.

Raspberries were next in order. The Allen, after a warm discussion, was placed on the list of *rejected fruit*. The Belle de Fontenay was placed on the list which *promises well*, and the Hornet was well spoken of. The Purple Cane or American Red was highly commended by Mr. Downing.

Gooseberries. The Downing was added to the list.

Blackberries were brought up, several new kinds spoken of, such as the Grape, Parsley-leaved, etc., but none added to the list.

Grapes. This subject proved the most interesting brought before the Society. The Taylor and Maxatawny were added to the list. The Clara was thought too tender for out-door culture. The To Kalon was said to mildew and rot badly in some localities, but was thought good when perfect. The Clinton was spoken well of by Messrs. Hooker and Prince, but others seemed to think little of it. Pauline was recommended by several Southern members as a fine grape. The Massachusetts White met with little favor from any body. Allen's Hybrid was spoken of by several, and the merits of the Anna, Ontario, Rogers' Seedlings, and others were freely discussed. The Delaware met with encomiums, more or less warm, an all hands.

On *Grape-culture* a great variety of opinions were expressed, each man seeming to have a system of his own. On some points, however, there was much unanimity, and some interesting particulars were elicited in regard to trenching, manuring, etc.

Pear-culture, however, brought out a greater variety of opinions than any other subject; some of them, indeed, curious enough. One gentleman thought moisture had more to do with the growth of plants than manure, the impression being that manure was of no consequence where moisture was abundant. Our reporter may have failed to catch his idea. Dr. Boynton gave some lengthened remarks on his mode of using manures for the pear, including a number of salts, by the use of which he claimed to have given his pears a high color and glossy appearance.

The Treasurer reported a balance on hand in 1858, $258.94; received September, 1860, $357; the total amount of expenditures $418.30; leaving a balance of $197.64 in the treasury.

The Standing Committees were announced by the Chair, which we shall publish as soon as we can get them. Boston was selected as the place for holding the next meeting.

The following resolution was passed: *Resolved*, That the thanks of this Society are tendered to Mr. T. P. James, Mr. J. C. Mitchel, and Mr. Wm. Saunders, the committee of arrangements for the meetings of the Society, for the excellent accommodations and polite attention which its members have enjoyed.

The exhibition of fruit was very fine; we annex a list of the chief exhibiters:

From Massachusetts—150 varieties of Pears from the President, Hon. M. P. Wilder—Hovey & Co., Boston, 25 kinds of Pears—G. B. Ide, Springfield, 21 var. Pears—B. K. Bliss, do., 5 var. Pears.

From Connecticut—Specimens Delaware Grape from Wm. Perry & Son, Bridgeport.

From New York—Frost & Co., Rochester, 20 var. Pears and Grapes—Ellwanger & Barry, do., 233 var. Pears, 80 of Apples, and 50 Plums—Dr. Boynton, Syracuse, 55 var. Pears—Thos. W. Field, Brooklyn, a branch of the Flemish Beauty Pear, 22 inches long, on which were 24 large sized and beautiful Pears—Trailing Blackberries, from Wm. Lawton, New Rochelle—H. C. Freeman, Astoria, fine specimens of the Delaware Grape.

From New Jersey—From Wm. Reid, Elizabeth, 26 var. of Pears and 6 of Grapes—John Chambers, Burlington, 112 var. Pears—Wm. Parry, Cinnaminson, 22 var. Pears, 22 of Apple and a variety of Quinces, Peaches, and cultivated Cranberries.

From Pennsylvania—Ellwood Thomas, Mont. Co., large specimens of Apples and Pears—Isaac Baxter, Philadelphia, 30 var. Pears—W. W. Keer, do., Bartlett and Seckel Pears—T. A. Attermas, do., 12 var. Pears and Grapes—Haines and Hacker, Cheltenham, 20 var. Pears and Grapes—Dr. Eshelman, Chester Co., a variety of Pears and Apples—J. L. Darlington & Co., West Chester, a display of well grown Grapes, as also J. Rutter of the same place—S. W. Noble, 22 var. Apples. An attractive feature of the exhibition were the dwarf Peach and Plum trees, laden with delicious fruit, grown in the orchard house of Wm. Saunders, Philadelphia.

From Virginia—22 var. Pears and 25 of Apples, from H. R. Roby, Petersburg—Franklin Davis, Saunton, 75 var. Apples—Oliver Taylor, Yardleyville. 18 var. Grapes and Apples.

From North Carolina—11 var. Apples and Pears, and Scuppernong Grapes, from Walter L. Steele.

From Michigan—120 var. Apples, 20 of Pears, and some fine Cherries.

From Illinois—80 var. Apples from J. H. Stewart, Quincy.

Mr. Cram, of Mount Joy, exhibited the Maxatawny Grape; not ripe, however. Mr. Renison, agent for Mr. Mace, of Newburgh, exhibited fine Delaware and Concord Grapes. Mr. Campbell, of Delaware, Ohio, exhibited the Delaware in great perfection. Mr. Goodwin exhibited the Creveling, a new early grape. Dr. Houghton exhibited a couple of canes in fruit, grown on Mr. Bright's plan. Mr. Spangler exhibited a seedling grape without a name. There were also a number of other exhibiters.

PROGRESSIVE GARDENER'S SOCIETY.—This Society still continues its interesting discussions, for a copy of which we are indebted to the Secretary, R. Robinson Scott, who will please accept our thanks.

(*Continued from page* 456.)

I will now tell you how I have seen manures composted in Edinburgh, when I was a lad. A man had a large yard back of the castle, with a canal through it, divided into three compartments by sluices; the sides was stone-walled and flag-bottomed; alongside the yard were slaughter-houses, tanneries, and currier shops; the offal and washing of these places were thrown into the canal and mixed with stable manure hauled from the city, and after lying a fortnight, being flooded all that time, the liquid was let off into another compartment, and the manure thrown out into a heap, well mixed, and after becoming well fermented it was made into heaps a yard high, and as long and broad as was engaged for. It was always bespoken before it was made up, and sold by the square yard. The great quantity of tan-bark among it neutralized the bad effluvia; it produced heavy crops of all kinds. An after compost was made by farmers near the city, who paid a high price for the contents of the water closets. The night soil was collected and emptied nightly, and hauled out to the farms, and put into large basins made with road earth; a single horse load of coal ashes from the city was put above a double horse load of manure as a deodorizer. After the basins were full they stood so a month; then the road earth forming the sides was cut up fine and thrown on top, and the whole turned over and mixed, and in a fortnight more it was applied to the land, and made early and heavy crops. Another compost was made with the roots of perennial weeds gathered off the field after being plowed and harrowed, and cleanings of ditches mixed with stone lime; the slacking of the lime burned the whole into a mould, and after being turned and well mixed, it was hauled out and spread upon the lands, and produced good crops. Sometimes a heap would have three hundred cart loads. Another compost was made with road earth, lime, and tan-bark, turned and well mixed twice, and never used until a year old; it made good crops.

Liquid Manures are the essence of the solid manures, generally speaking; they give more immediate effect to plants and are well suited for pot-culture, and I think that they are better for woody plants than solid manures, and they can only be taken up by them in that form; they incorporate at once with the soil. Fruit-trees, gooseberries, currants, raspberries, are particularly benefited by them, but they should be applied immediately after rains during hot weather, or be very weak. I think that they do most good if applied in winter or spring. The liquid of the barn-yard is perhaps the best. Soapsuds appears to be of a burning nature, as it hardens the soil very much in hot weather.

W. SAUNDERS.—We are indebted to the member for his very full and interesting informa-

tion, embracing the experience of a lifetime. As to charcoal, I would say that it has little or no manurial property, but its value is as an absorbent. We are told that it absorbs ninety times its weight of water, but no information is given as to the description of wood, on which much depends. The influence of manures on the physical texture of the soil is a very important topic; indeed, too little attention is given to the subject. In many soils the best manure is comparatively of little value. If air, the natural agent, is excluded by superfluous water, the manure will be worthless or inactive. The question of the value of all manures must depend on various circumstances, and those doubtless account for the great difference of opinion as to the application of manure to the surface, or its immediate covering in the soil.

PROF. STEPHENS.—If I understand the question raised by the last speaker, I do not disagree materially with him as to the propriety of manuring on the surface with long stable litter—that is, covering it a few inches. Such manure benefits heavy soils by its decomposition, but in the case of light soils this would be unnecessary. With proper management little loss need result from surface manuring. Manure which is fully decomposed, must lose some of its valuable elements which are already in a condition to be of immediate use to the roots of plants. By plowing in long manure in the fall, leaving it to decompose till spring, it will then be available. I can not see the sense of what is termed surface-manuring; that is, spreading it on the surface where it is fully exposed. True, the gases in part are absorbed by the soil, yet much of the volatile matter is lost and much washed down by the rains. These matters are, however, brought up again by capillary attraction. With reference to the dark liquid, resulting from peat or muck lands, that contains *ulmic* as well as *apocrienic* acids, and these are in a measure injurious to plants. These may be neutralized by an alkali, or they may be corrected by treating with lime.

DR. GEORGE P. NORRIS had some experience in the application of manure; he had always thought it better to plow it in than spread it on the surface. One objection he saw in fall plowing of manure, that in the spring, when required by the plants, the best part was gone. The nearer the food was to the top, where the roots of the young plant are, the better. Top-dressing in fall and plowing in the spring, appeared to him the proper method with regard to the absolute propriety of this practice of surface-manuring; one thing was clear, that one or the other method was the right one, and we should not rest satisfied until this had been clearly ascertained.

C. H. MILLER.—I can scarcely reconcile myself to the common practice of plowing in the manure to the depth that our farmers generally do. This course he had heard advocated for the past twenty years; he was now a believer in surface-manuring. It prevents the surfaces from baking, which is a great benefit. The result which follows from the top-dressing of grass lands is sufficient proof of its utility; by this means clover is produced where it never grew before. Surface-manuring he considered the best, as the manurial properties were not placed too far beyond the reach of the plants.

JAMES JONES.—Had found that stable manure, applied in this way, encouraged the *black fly*, which devoured all the crops of turnips and cabbage. By plowing in the manure to a proper depth, it sufficed for two crops, as he found the ground sufficiently rich for two crops in succession, in some instances.

The Eighth stated meeting of the above Society was held on the 11th of June, at Druid's Hall, south-east corner of Thirteenth and Market streets, Philadelphia. William Saunders, President, in the chair.

It was announced to be one of the objects of this Society to afford its members means of reading the current periodicals connected with their business, and a library would be one of its ultimate features; towards the promotion of this, donations of books and papers are solicited from those favorable to our purpose; and such serials and books as may be spared will be gratefully accepted and acknowledged. Mr. John Pollock, gardener to James Dundas, Esq., Broad and

Walnut streets, was appointed Librarian, and any donation intrusted to his care will be safely deposited. The regular stated meetings are held on the second Monday of each month, so that special notices will in future be dispensed with. After the transaction of other preliminary business the following named members were elected: Robert P. Haines, Cheltenham; James Keenan, Germantown; Charles Greenwood, Falls of Schuylkill. N. B. Should any member be misreported, he will please notify the Secretary, who is alone responsible.

MILDEW.—The subject of Mildew, proposed by Mr. Grassie, V. P., was then taken up, by the reading of the following Essay:

Mildew, whether on the vine, the stems of wheat, the leaves of the chrysanthemum, gooseberry, pea, rose, or peach, is the result of parasitic fungi, the roots of which penetrate the epidermis, rob the plant of its juices, and interrupt its respiration. It is generally admitted that every species of plant has its own peculiar forms of vegetation and animal parasites. Although the same species may not unfrequently be found on different plants, in general they are found in greater abundance on the plants to which they appear to have some affinity. Thus we have the mildew on the peach, the vine, pea, berberry, &c.; named and known as such. This much is admitted, but what we want to ascertain is the cause of its origin. Here we find a diversity of opinion, and, I may add, will likely continue to do so, as on all such subjects.

There are three or four opinions more prominent than the rest, and worthy of our practical investigation; it shall therefore be my object to present those views (as understood by me) to the members, and learn their experience with regard to them.

First, we may take the President's theory of it, in which some of the most practically observing men in this country and Europe coincide. At a former meeting he gave us the result of his practical observation, that plants by nature or habit, natives of a moist climate, introduced into a dryer atmosphere, are victims to mildew; that dry air, as stated in the Theory of Horticulture, acting on the surface of tender vegetable tissue, was favorable to its development, mentioning the lilac and hawthorn as examples. It is a well-known fact, that in dry seasons we have more mildew than in moist; and I have no doubt all of you who have had experience with the peach-tree on walls, in Europe, have observed that those trees that got copious syringings were not troubled with mildew, in comparison with those that were left to themselves. We had two or three dry, warm days this season, in April; with me, English gooseberries, where most exposed, were all mildewed; those in a more moist and shaded position partially escaping. Again, in sowing peas for fall use, if they get good, copious waterings, they are never much affected with mildew, and all know that in a dry fall turnips are apt to mildew.

The Second Theory is quite the opposite of the first. It supposes mildew to be produced by too much moisture; that is, the leaves absorb an excess of moisture from the atmosphere; the soil is too dry for a comparison with the air; that if damp and cold weather succeed that which has been warm and bright, without a good fall of rain, we are sure to have mildew; an injurious absorption of moisture by the leaves and stems of the plants takes place, the ascent of the true sap is retarded, a retrograde motion of the fluids is produced, and the plant becomes the food of fungi. I may add that this theory has been very generally accepted as the true one.

The Third Theory is, that fungi are communicated to the plants from the soil, and developed within the tissue, and that they afterwards make their way through the stomata; that every specimen emits annually myriads of minute seeds, (sporules,) and these are wafted through the air. They may remain dormant until a convenient season, then vegetate and reproduce sporules; that they have likewise the power of spreading by throwing out offsets from the roots, so that they are never absent from the soil, but at one period or other are to be found on the plants subject to their attacks.

The Fourth Theory is, that mildew is caused by the distempered juices of plants, and no one ever saw mildew upon the leaves of a healthy, vigorous plant; in short, is not so much in the atmosphere, either wet or dry, although it originates on the surface of plants, but that the tissue of the subject has always been, previous to being attacked, in a diseased state. I have never

found mildew attack any grape-vines under my charge but once, some three years ago, and then slightly; it was on the variety called *White Nice;* the previous fall the wood had not been well ripened; the next spring it bled considerably; the wood produced was unhealthy, watery, and spongy, hence a fit subject for mildew. We have several cures, in the way of sulphur, nitre, common salt, the fumes of black sulphur, hydro-sulphate of lime, &c. But prevention is always preferable to curative operations, and I have no doubt that if vines are kept in due vigor, well drained, the border protected against excesses of either moisture or dryness, and the leaves protected from sudden atmospheric changes, they will never be visited by mildew. For those who may require a cure, I may mention that I have never found it necessary to cover the bunch and leaves of the grape with sulphur; only simply spreading it about is generally effective. Hydro-sulphate of lime is made of equal parts of quick-lime and sulphur, one pound of each to five pints of water, boiled for ten minutes; to this add one hundred parts more water; let it clear, and syringe with it. Common salt for roses, peas, and similar out-door crops, two ounces to the gallon of water; of nitre, one ounce to the gallon; with this syringe the plants.

After the Essay had been read, quite a discursive debate took place, which we shall not attempt to give in detail. From the points elicited, it may be deduced, that quite a difference of opinion was maintained among the members present. Of the four theories set forth in the essay, it appears two only were held by the speakers. The essayist, while he did not adopt either of them, still appeared to agree with that which attributes mildew to a dry atmosphere.

WILLIAM SAUNDERS thought the principal object with us should be, not so much to discover the cause of the disease, as to point out a remedy by which its evils might be avoided. We have little to do with the scientific questions involved; our object should be to secure our crop of fruit. What is it to us whether mildew does or does not exist in the leaf in an undeveloped state, if we save the crop? and this, I hold, can be done by care, and attention to ventilation, &c. It is also my opinion that mildew can not attack a leaf or plant till decomposition is first going on in the tissues of the plant. Much might be said and conjectured as to the causes; what we want is, facts. I place no importance on authorities quoted here.

JAMES EADIE could not admit that mildew only attacked plants already partly decomposed; his observations had led him to different conclusions. He had detected mildew where there was no previous decomposition.

WILLIAM SAUNDERS.—Damp had been adduced as the cause of mildew, but I can not agree with this conclusion. It has been asked, how shall we prevent mildew in graperies? I say, by admitting little air, and no air below. If mildew be caused by damp, how do we account for the absence of mildew on the gooseberry in the moist climate of Scotland. I may also mention that, while in New Haven, Conn., we had a very damp season in 1850, and there that year I had fine gooseberries, free from mildew. The lilac here is not affected in wet seasons as it is in dry; and the hawthorn—what destroys the hawthorn in this climate, but our dry, hot summers? There is nothing scientific about this matter; if we can prevent this dry, arid air, we can remedy all this. All the remedies applied have acted by producing this result: for instance, salt hay is used to mulch the gooseberry, and, by preserving moisture, prevents the mildew. The mildew on bread has been spoken of as an example that damp produces these fungi; but bread-mildew is not vine-mildew; the idea of mildew seems to be associated with the idea of dampness, but these various forms are various species of fungi. We are told by Lindley, in his Theory of Horticulture, that dry air, acting on tender vegetable tissue, will produce disease. We may set aside the scientific part of the question entirely, and arrive at a proper conclusion. If plants are kept in a house, in a nice, moist, growing atmosphere, they will never mildew. As to European forms of mildew, they are not identical with ours. Grapes are not mildewed in England or Scotland, and the plants that are generally subject to mildew are natives of a country with a more humid atmosphere than ours.

DR. MCCLURE.—But does not mildew occur independent of all these circumstances, as laid down in the case of the gooseberry? And are not peculiar circumstances to be taken into account in the inquiry?

JAMES EADIE.—Can not subscribe to this dry air theory; have found roses attacked with mildew in very damp houses; in fact, the damp appeared to be the direct cause of their being mildewed. I do not know exactly what we should understand by a nice, moist, growing atmosphere. I have experienced mildew in what I would consider just such circumstances. It has been stated that mildew will not occur if air is moist and currents of air avoided, but this is not the fact; the disease is there; it requires some warm, sunny days to make it obvious on the surface of the leaves. The mildew is established during the dark, cloudy days, and, after maturing, rises to the surface, when it is seen for the first time to the eye; but careful examination of the leaves will prove its existence previously; it is shown in discolored blotches, which exposure to the sun will turn brown. When the grape-mildew is fully developed, presenting its peculiar white, downy appearance, it can be washed off with the syringe, but the disease is not washed out of the leaf. There is not a single fungus in existence that will develop in a dry, warm atmosphere.

WILLIAM SAUNDERS.—How is it, then, that they are more prevalent in dry weather?

JAMES EADIE.—Dry weather, immediately after dull, cloudy weather; and I would ask Mr. Grassie if his gooseberries did not mildew in dry weather *succeeding* very dull, damp weather? Why is it that if mildew is worse in dryest atmosphere, that in Syria, of which the grape is a native, it is unknown? and how is the potato disease to be accounted for, attacking a Peruvian plant, which was never subject to *botrytis*, or potato-murrain, in its native soil, in the damp climate of Ireland and England? How is it that the vine-disease is prevalent only in the low countries of Europe, and not in the high districts? Sulphur and lime are applied because of their effects in drying up the fungus.

WILLIAM SAUNDERS.—Another fact may be quoted, in relation to the Virgalieu, or butter-pear. This is rendered worthless in low grounds by cracking and spotting. In city yards it is generally exempt. This is owing, in my opinion, to the protection of the trees by the walls and houses, so that dry currents are prevented.

C. H. MILLER.—Has not had much experience with mildew this season, in-doors; has observed it out-doors more. Avoid cold currents; mildew occurs most in ungenial weather, causing a check or stagnation to vegetation; attacks diseased, sickly plants more than those of luxuriant growth. Has had no mildew on roses; keeps them in an airy yet moist temperature; thinks them more liable in dry than in damp weather. With graperies I allow no front air, till time to ripen off crop; am not an advocate for much air for grapes, and this at top. With proper precaution there is no fear of mildew. Thinks, on potatoes, it occurs in wet weather, and in dry, hot days, after damp weather. Seeds of fungus seem to grow in damp, and are matured in dry atmosphere. This is not very clear, however.

JAMES EADIE.—The last speaker observed that the strong-growing varieties of roses are more liable to attack than others. This is only the case in some instances. *La Reine, Giant of the Battle*, and *Reine des Fleurs*, all of them strong growers, can not be kept free from it; while weak, slender-wooded trees are quite free with me. Nor can I concur in the idea that currents of air tend to produce it. All fungi are propagated and developed pretty much under the same conditions. Now, take the mushroom-house as an example: who would think of starting his mushroom-spawn in a current of air? Do not we keep our mushroom-bed as close as possible, exempt from any change of temperature? If the air is kept dry, the fungus will not soon spread, while if kept close it will run before twenty-four hours. It is worse in the hot, dry days which succeed damp weather; then the fungus is dried in the sun, and becomes visible; in the damp weather it was growing and extending rapidly over the plant unobserved.

C. H. MILLER.—It is not injurious in damp weather.

R. R. SCOTT.—There are many topics connected with this subject to which I should feel disposed to advert, did time permit; but, limited as we are, I could not do justice to them. I shall therefore only remark, that there seems little appearance of any unanimity of sentiment here. I think it is an error to come here with a preconceived idea or theory, determined to abide by it, and so force facts as to make them accord with it. In fact, no single theory, nor any of those laid down, will serve to satisfy the requirements in the various forms of parasitic fungi, and the destruction by them of plants, fruits, and grains. The causes that will account for the *vine mildew* will fail to explain the pear fungus, or disease in the apple, pea, or gooseberry. The circumstances under which these various forms of organized life are propagated and developed are different, though the nature of their growth is similar. There are many various forms of them, many entirely distinct in their operation. As to the cracking of the pear, one of the most conclusive evidences of this is the fact, that until all the various theories were exhausted and disproved by a variety of circumstances, the freedom of the *White Doyenné* from cracking, in city yards, first led to the acceptance, in this country, of the statement made years ago by Berkeley, that this was caused by a parasitic fungus. The truth was rejected as long as possible, but in no other way could this fact be accounted for, that the fruit was exempt in cities, where the trees were not subject to the fungus floating in the atmosphere. While I see no probability of agreement of opinion, I believe I can see my way somewhat more clear through the arguments adduced, and this is at least a benefit. Much of the information possessed by gardeners, on this and similar subjects, must be from reading and study, not alone from personal research; time and means do not permit them to investigate scientifically in many branches; therefore they must, if they search at all, accept the opinions of those in whom they think they can place confidence. This, I admit, has been my own course. The information on cryptogamic botany I have gathered, has been from the researches of others chiefly, with such observations in the nursery and garden as I could make; much, however, can be learned in this way, and I do not think it right here to ignore all greater authorities, and confine us to our own observations in questions of this nature. With respect to several arguments used in the course of the remarks this evening, I have something to say. I can not believe that parasitic fungi only occur on diseased tissue; nor that a dry, arid atmosphere is congenial or favorable to the development of their minute *spores* or *mycelia*. I believe, from all that I have seen and learned, that moisture, at least in their nascent state, is the desirable and essential condition, generally; there are exceptions: that after the fungus has been developed and extended through the tissue, that it matures, throws up its *fruit spores*, is then visible; and if a hot sun succeeds, and acts on it, will become brown, and the tissue of the leaf will be destroyed. We should not confine ourselves to one or two forms, but reason from a full knowledge of facts.

WALTER ELDER.—The questions to be answered in the discussion of this subject, so far as I understand it, are: What is Mildew? Whence does it come? Where is it found? And how can we guard against it?

1st. There is a diversity of opinions as to what mildew is; some assert that it is a parasitic fungus; a genus of plants of many species, which bear fruit and propagate themselves by seeds. And this answers the first two questions.

3d. Where is it found? It is found upon nearly all kinds of decomposing bodies, requiring a certain degree of moisture for its workings, either in the air or in the bodies upon which it is found. Ripening grains that have been lodged by heavy rains, and remain long wet, and when shocked and stacked, if not fully dry. Wall-papers produce it when the walls are long wet and the rooms dark; our wearing apparel and eatables, kept long in damp closets and cellars. What we call "fire-fang," in dung-heaps, is mildew; it is upon grape-vines, roses, peach-trees, &c., when growing in forcing-houses; turnips, cabbages, gooseberry-bushes, &c., when growing upon a dry soil, and in a dry atmosphere, and exposed to the sun. It can not exist upon a

dry, light, and airy surface, nor in water. Wherever you find darkness, moisture, and exclusion of fresh air, there you will find mildew, and decomposition going on; upon whatever living plants it is found, they are suffering from a reaction in their growths, and are in a state of decomposition. And mildew is the sign which is first observed upon the leaves, young shoots, and fruits, and if unchecked will soon destroy the plants altogether. And it is only when plants are growing upon a soil and in an atmosphere unsuitable to their natures, that they are affected with mildew. The exotic grape growing out-doors in our Middle States, and the peach-tree growing out-doors in the north of Europe, are affected with mildew, the climates being unfavorable to them. The exotic grape is free of it, growing upon the hill-sides of France; the peach-tree generally, growing in our open fields in the Southern States; the rose in the open gardens; as heat, dryness, and pure air are their especial requisites: but when growing in forcing-houses, stimulated with rich manures, artificial heat, a confined air, and an excess of moisture, their vitality is overstretched and weakened; a slight reaction throws them into a state of consumption or decomposition; hence the cause of mildew upon them. Turnips, cabbages, gooseberry-bushes, &c., are free of it when growing in moist soils and cool atmospheres.

4th. How can we guard against it? This, in a horticultural view, is the most important point; but as it has baffled all the most skilful cultivators the world ever saw, we can not expect to be always free of it in our forcing-houses. We should grow all our plants as nearly in accordance with nature as possible: but how can gardeners supply all the requisites of many different genera and species, growing promiscuously in a glass-house? Where the exotic grape-vine, peach, and nectarine trees are only grown, the same remedy and preventive will suit them all. Lime and sulphur will greatly arrest the evil, and save the plants and their fruit from ruin; clear light, pure air, cleanliness, a uniform temperature, the wall frequently whitewashed with hot lime, fresh slacked lime frequently dusted over the floor, will tend greatly to prevent the appearance of mildew. The new-fashioned glass houses, with stationary roofs and large glass, are far superior to those with deep and heavy rafters and small glass, as they give more light and less shade; the manner of ventilation is also better. The whitewash upon the glass in summer should be very thin, so as to let the light be clear without scorching; thick whitewash is too cloudy in dull weather, which greatly increases the spread or propagation of mildew; darkness, too, is very hurtful to all kinds of plants when under a high temperature, and might cause a reaction in their growths, as sudden changes of temperature often do. Another cause of mildew is the crowding of plants too closely in the houses, which makes too much shade, and retards the free circulation of fresh air among them; and who knows but when the grapery is long close shut up in winter, the seeds of mildew may be sown, and not appear visible until heat and moisture are applied in spring? and it is for this reason that I think that every glass structure for growing plants should have a chimney, like a dwelling-house chimney, and always kept open, both to admit fresh air and to allow impure air in the house to escape. Any person may be convinced of the importance of this, by going through a dwelling-house that has been long shut up; he perceives the difference of air in rooms with open chimneys and those which have not. I think that mildew is a messenger sent to us from heaven to tell us of the approach of evil—to remind us of our duty, and to caution us against imprudence in overdoing our work.

In conclusion, I say, guarding against sudden changes in the temperature of the houses, a strict observance of cleanliness, and a rigid adherence to the scientific principles of ventilation so ably explained to us lately by William Saunders, in his essay upon that subject, will do much to prevent the ruinous effects of mildew in forcing-houses.

Some additional remarks were offered, when it was proposed to continue the discussion of the subject at the next meeting; and members are requested to submit specimens of the more prominent forms of fungi which cause mildew, as well as reliable authorities on the subject. The meeting, having adopted this proposition, adjourned.



PEACH.

Camellia Flowered.

for THE HORTICULTURIST,

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The Central Park.—No. 2.

IN our former article on the Central Park, we presented some objections to the crowded planting of the trees, and closed with the remark that we should have something more to say to the same purpose. We continue the subject now, while it is in season, with the hope of being able to offer some suggestions that may be both available and useful. We have also another object in view, and one which appeals to our native pride. Several parks are in progress elsewhere, and from year to year they will be springing up all over the country, some of which will no doubt rival our own in point of size, and, it may be, in natural beauty. Brooklyn has already proceeded in the matter; and before this number reaches our readers, Baltimore will have inaugurated a park almost equalling that of New York in dimensions, and which they purpose making the finest in the country. They will have the advantage of profiting by our success, and avoiding our errors; and from information received within a few days past, we are warranted in saying that the crowded planting and monotonous grouping, already alluded to, are among the errors which they will avoid from the very beginning; and if they do so, and the present system continues to be carried out at New York, our Baltimore friends ten years hence will have incomparably the best wooded park. This, and a recent conversation on the subject with some of the commissioners of a park in one of our eastern cities, give us reason to know that our remarks, brief as they were, have not been without their influence elsewhere, if not here.

So much has been said and predicted of the Central Park, that these cities will naturally look to it, in the first instance, as a model to study; this will be done with critical eyes, and we should therefore aim to make our park as perfect as may be both in its plan and execution, and with an eye to its future grandeur rather than present effect: if either is to be sacrificed, let it be the latter. We have a deep conviction that this is not being done in regard to that particular feature which gives character and grandeur to a park, and without which, indeed, there can be no such thing as a park.

We have already objected to the close planting of the trees, that there is no necessity for it, and that it is not in good taste. Let us say here, in order not to be misunderstood, that we do not object to an occasional clump of trees; such clumps may sometimes be introduced with the best effect; it is the ever-recurrence of these clumps that we consider an offence against good taste. It is so not only with the trees, but also with the shrubs. In the latter case, the design evidently has been to imitate the wildness of nature; but it has not been done, as a general thing, with the best success; the shrubs are so much crowded, without regard to their future growth and appearance, and put in with such mathematical formality, that the effect

has been greatly impaired, and an impression of almost painful stiffness is produced on the mind. This is what may be termed the German method, and we confess that it finds no favor with us; we do not like it, even in right-angled gardens, the only place where it should be tolerated, if tolerated at all. It is altogether out of place when brought into immediate contact with the tangled masses of a natural growth.

But this close planting is a positive injury to the trees; it not only impairs their form, and beauty, and individuality, but it retards their growth, and makes them tender; planting oaks two or three feet apart can only have the effect of dwarfing the monarch of the forest into a pigmy. It is well understood by professional men, (though not by the public,) that these trees are not intended to remain in this crowded condition; but we are fearful of the future. We know that some European landscape gardeners recommend thick planting, (but not so thick as we find at the park,) a portion of the trees being called "nursing" trees: a better name for them would be "robbers." In respect to those kinds that are hardy, these "nursing" trees are a pure fiction, in our climate at least, and we believe in all climates: we say this distinctly, without foregoing our conviction of the need of a certain degree of protection under given circumstances. The trees, under these conditions, make their chief growth from the top, and this of a weak and spindly nature, while the lower laterals also become weak and tender, or cease growing altogether, or die off, and the healthy formation of roots is correspondingly interrupted. This is now getting to be so well understood by our best nurserymen, that they are doubling and trebling the distance of their trees in the "nursery rows," and with the best results to the trees and their own pockets. Every consideration, therefore, of economy and æsthetics condemns this "gregarious" system of planting. We shall save time, and labor, and money, by giving the trees a little more room to grow in, and sooner have a park to be proud of and enjoy.

We ought to add here, that the groups more recently planted at the lower end of the park are much better disposed of, so far as space is concerned; and we accept this fact as an indication of better things to come. The probability of a forest of bare poles is somewhat lessened in consequence; for we have but a faint idea that these groups will ever be properly thinned, however firm the determination to do so may now be; if ever done, it will probably be by other hands, who have no proper conception of the effect intended to be produced by the original planting; and this is an additional reason for putting in now just as many trees as are wanted, and no more.

But we stop for the present. We shall have to indulge in a little more fault-finding on this subject, and after that we shall have some very pleasant things to say.

THE DELAWARE GRAPE AGAIN.

BY A. THOMSON, DELAWARE, OHIO.

This grape has for a number of years occupied a prominent position before the horticultural world, and its merits, probable origin, and various collateral questions have been very thoroughly discussed. It seems, however, there is still a difference of opinion as to whether it is a native or foreign variety.

That it is not *indigenous*, but an *exotic*, one gentleman at least has, during the last year or more, manifested unusual anxiety to show ; and if the most positive assertions to that effect, uttered in almost every imaginable form, are to be taken as conclusive, there is no room for further controversy. The gentleman referred to is my old friend and correspondent, Wm. R. Prince, of Flushing, whose communication in your September issue demands some notice.

In that communication, as well as in his grape catalogue, in most of his recent advertisements, and in numerous letters that have come under my observation, he declares in most positive terms that it is clearly and unmistakably a foreign vine in all its characteristics ; and in one of his epistles declares that "no man of fair perception can be excused for the stupidity of classing it as a native." Nor is this all. He also denounces it as "one of the weakest foreign vines," and totally unsuited to exposed garden or field culture.

In regard to the nativity of the vine I am not prepared to speak in positive terms. It has always been my belief that it originated in the garden of Judge Provost ; probably a chance seedling, and not unlikely from seed of fruit from a foreign vine. This, however, is merely an opinion, and may or may not be correct. Knowing it to be perfectly hardy, as free from mildew as any variety with which I am acquainted, prolific, of healthy and vigorous habit, and the fruit of unsurpassed excellence, I have not regarded it a matter of consequence whether it is a native or foreign variety. I have never, I believe, asserted that it is beyond all doubt a native ; and if I have made declarations looking that way, they have been the result of evidence furnished by those in whose competency to express an authoritative opinion I have confidence. I think nine-tenths of those who have undertaken to classify it *botanically* have ranked it as a native ; and if they are masters of the science it must be a native, or the science is fallacious. On the evidence of gentlemen of this class I am willing to rest the question, and acquiesce in their decision. I will not attempt to collect the published testimony attainable, but will content myself with introducing two witnesses only, in the competency and judgment of both of whom I have great confidence. The *first* is a gentleman who occupies a conspicuous position before the horticultural public, and whose authority on questions such as this few would feel disposed to dispute. In a letter dated Jan. 18, 1859, he says :

"I have been a 'devotee' of botanical science for near twenty years, and *think* I can tell one *species* of grape from another. If the Delaware *is* of foreign origin, I shall have to believe botanical rules all 'nonsense.' There is *certainly* no foreign sap in its vessels."

The *next* witness I feel at liberty, under existing circumstances, to name. He is William R. Prince ; and in a letter before me, dated Nov. 12, 1855, he thus expresses himself :

"Mark my words. I say your Delaware Grape is *not* a foreign variety. I don't say 'I don't think'—I say *I know the fact.* The Traminer is the 'Auvernas Rouge Claire' of Burgundy and the Rhine, and has been well known to me [W. R. P.] these twenty-five years. I once had several thousand vines of it."

This is a literal extract, *italicising* included. It certainly is pretty strong, coming as it does from a gentleman who now claims that it "has all the attributes of the foreign species, and does not possess one solitary attribute

of our native species ;" who is constantly quoted to prove that the Delaware is a foreign variety ; and who seems to coincide with the opinion expressed some fifteen years ago (not now) by "Germans in Ohio," that *it is* the Traminer.

A few words on the other branch of the subject. Mr. P. regards all who recommend the Delaware as adapted to exposed or vineyard culture as guilty of "gross fraud." In support of this theory he makes frequent reference to a visit he made to this place (Delaware, Ohio) in September last. In his article in your August issue, he says :

"I visited the town of Delaware, Ohio, last September, and, to my great surprise, I found but one Delaware vine in bearing, and that was trained against the south side of Mr. Campbell's stone house, and was so sheltered that any of the Chasselas grapes would mature their fruit in the same position."

The obvious intent of such language is to create the impression, as it in effect charges, that the Delaware does not succeed elsewhere than in the most sheltered positions. To undertake at this day to controvert an assertion like this would be decidedly a work of supererogation ; all fair experience, sustained by a "cloud of witnesses" in all sections of the country, refutes it. I am not prepared to speak of its success in "vineyard culture," as I have not seen it so tried ; but I do *know* that in this region of country (and a more trying locality, as regards variableness of climate, it is difficult to find anywhere) it *does succeed* admirably *in any situation where* ANY OTHER *grape will succeed ;* and my firm belief is, that a proper test will prove it to be most admirably adapted to "vineyard culture."

But Mr. P. "visited Delaware," and as I happen to know something of that visit, justice demands that I should refer to it. When here, Mr. P. had from one and a half to two hours at his disposal, and the day being a wet and disagreeable one, he visited but two gardens, Mr. Campbell's and my own. In Mr. Campbell's garden he saw *three* vines loaded with fruit, two of them on the south, the third on the west side of the house. In my garden he saw some thirty vines, embracing most of the hardy varieties in cultivation, but on *none* of them, except an Isabella and a Catawba trained against the east side of my brick dwelling-house, *did he see any fruit.* And *why not?* For the very good reason explained to him at the time, and since twice or thrice repeated, that the unprecedented frost of the fourth of June preceding had utterly destroyed not only all the fruit, (of which there was a large quantity set,) but also all the wood grown up to that time, not of the Delaware alone, but of Clinton, Concord, and *all* other vines not thoroughly protected. This is the reason Mr. P. found matters as he did ; and that he should attempt to present such a state of affairs to the prejudice of the Delaware, is to me matter of as "great surprise" as it possibly could have been to him that he "found but one Delaware vine in bearing." That he found no vines in bearing in my garden was simply because my Delaware vines were all layered, and I had none thus protected ; though it is a fact that I procured last fall Delaware grapes from more than a dozen different vines within the corporate limits.

I have this season a vine in my garden, all of which is layered except two branches. From the two branches I picked on the 20th of August, and sent to C. P. Bissell & Salter, Rochester, N. Y., thirty-six splendid clusters of fruit, leaving about the same number on the vine ; and from the layers

(which have grown from five to fifteen feet) picked, on the 7th of Sept. inst., about three pecks of well matured fruit. I know of no bearing vine, whatever its exposure, that is not fruiting this season ; and the two original vines, planted nearly twenty years ago in open, exposed situations, are both still in vigorous health, and doubtless yielding their annual product of choice grapes.

Mr. P. speaks of "self-interest" in reference to those who defend the Delaware from his unjust aspersions. I am not a professional nurseryman, nor is vine-raising any part of my regular business, and my "self-interest" in the vine is not sufficient to warrant any great outlay of time in defending it ; but I am impelled thereto by a love of justice and fair dealing, and from an interest I feel in its reputation, growing out of the fact that I had the honor of first introducing it to the notice of horticulturists. Mr. P., I think, must himself have a *motive* for his extraordinary course. I might *guess* what the motive is ; but not being a Yankee, I will not exercise that privilege. I might, too, search for it amid the manifold springs that control human action, and as a reward for my labor be enabled to cry "*Eureka!*" and write down "*self-interest;*" but to do so would, to say the least, be ungenerous, and I forbear.

The Delaware is in the hands of the people ; an intelligent and discriminating horticultural public will doubtless do it justice, and if it will not pass the ordeal of all fair tests unscathed, let it fall. All its friends desire or ask is, that it be treated justly and fairly.

[It is meet and proper that Mr. Thomson should come forward with a statement of the conditions under which the Delaware is growing at his own home and in his own locality. It is there that it has been longest cultivated, and it is there that we look for the strongest evidence of its fruitfulness and general hardiness. Its character in both these respects has been impeached, and we have been pointed to Delaware for the evidence. Mr. Thomson's silence, under these circumstances, has been regarded by some as a confirmation of all that has been said in disfavor of the Delaware grape ; there are many, however, who have had abundant opportunities of testing its hardiness under a variety of circumstances, who regard such silence in a different light. We now have the facts on the other side as regards Delaware, and the public will be better able to form an impartial judgment. We think Mr. Prince has injured his own cause by the use of harsh language. If he would only for a moment reflect that he himself once considered the Delaware a native grape, he would have more charity for those who now entertain the same opinion that he once did ; certainly he would not gravely charge them with "gross fraud" and being governed by "self-interest," because he must know them to be men of too much integrity to be open to any such imputation. There are men of undoubted honesty all over the country, in no way interested in the sale of vines, who believe the Delaware to be a native grape ; and it is neither right nor proper to impeach their integrity because their convictions may not happen to agree with our own ; it is not only illogical, but unfair. The proper way to convince an opponent, is to lay before him the evidence which brought conviction to our own minds ; and before doing so we ought to be quite sure that the evidence we purpose presenting is of such a character as to carry with it the force of truth ; certainly we can not hope to convince him by attempting to impeach his honesty, and in

the attempt we are very apt to betray our own weakness. These remarks are of a general nature, and intended to apply to this or any other subject in dispute. There are certain facts connected with the Delaware grape, and these we want: it mildews more or less than other kinds; it is more or less productive; it is more or less hardy under given conditions of location; it is more or less robust in its habit; it has certain qualities of goodness as compared with other varieties; it has a history in reference to its origin; it has certain natural characteristics which serve to determine its place among native or foreign vines; these and similar facts, well ascertained and fairly presented, will bring conviction to all candid minds; others would not be convinced "though one rose from the dead."—Ed.]

LANDSCAPE ENGINEERING.—No. V.

BY GEO. E. WOODWARD,

Civil and Landscape Engineer, 29 Broadway, New York.

It may be a matter of surprise to many to learn how intimately the arts of design are united with those of construction, or rather the great use made of a draftsman's skill in developing a work of art, exhibiting its effect, and conveying to the most practical mind its most simple form of production. In architecture, machinery, etc., this is admitted, because the general education of popular taste enables us to understand how we can execute an idea on paper, and carry out a practical result in accordance with it; but when we come to a more intricate form of construction, and more particularly that which relates to landscape adornment, we fail, as a general thing, to recognize any principle of design on paper as applicable to the tasteful results we would like to produce. There evidently is a want of knowledge of the manner in which positive results are attainable in the various departments of art. We are too apt to suppose that there is but the one step from conception to execution; that the brain originates, cherishes, and perfects an idea which the same skilful hand at once executes, while in reality we overlook the intermediate links, which step by step lead on from the first original thought to the perfect result—a result as finished and thorough in model or plan as in the final execution. Effects, position, color, form, etc., are all studied in advance, individually and collectively, the details arranged, and the impracticabilities discarded. And where a superior mind is to fix its impress, it has then the ability to direct the execution by inferior minds and hands of the artistic work it has perfected. The artist can convey his plan and his thoughts to others, to execute those mechanical details which belong to every work of art, and which carry it forward to receive those Michael Angelo trifles which make up that "perfection which is no trifle."

In no department of the refined and cultivated arts, and more particularly in the arts of construction, do we see the principles of design so completely ignored as in that of landscape gardening; it is perhaps in this country one of the most experimental of all the arts, and consequently one of the most expensive.

That we all have, or think we have, an intuitive idea how a country place should be laid out, can not but be generally admitted, and with the supreme

folly of supposing that every one's taste, whether professional, amateur, or otherwise, is wretched bad taste unless it coincides exactly with our own. There are so many ways of beautifying a landscape, each of which shall be entirely unlike the other, and comprise the same amount of good taste, that it is surprising why those of little or no taste seek to fortify themselves by condemning the taste of others. There are some, however, who are not shrewd enough to conceal all their weak points, even when they are not able to comprehend why landscape work in the process of construction differs so completely from the finished effects of the original design.

Perhaps there is no department of art that so much requires the aid of those principles that facilitate the comprehension and execution of work as that of landscape gardening, nor is there any art to which a system of working drawings is more thoroughly applicable. As a matter of economy and taste, it is more satisfactory to experiment with a pencil than with real objects ; it is better to work out your plan on paper, accept or reject your gratuitous criticisms, study well your chess-board series of combinations, and then execute with a thorough understanding of the result. In no other manner can excellence be reached ; we must know effects, beauties, cost, etc., in advance ; and improvements of every class can just as well be studied in the abstract, and the plans for their execution be as thoroughly perfected for any form of landscape adornment, as they can be for any form that is cut from marble or delineated on canvas. There should be adopted an intelligent mode of conveying impressions from the mind that originates, to the hand that constructs ; and this medium between the artist and the mechanic or laboring man must be an expression of a well-studied plan, free from all mechanical impracticabilities, and so plain as not to admit of a misunderstanding.

The range of art is so extensive, and its applications so varied and beautiful, as to leave no question unanswered in this triumph of mind over matter. And those who wish to attain the direct road to success, combined with the minimum of expenditure, will do well to investigate its principles.

IOWA PRAIRIE SKETCHES.—No. V.

BY "MINNIE."

The principal genera of flowers appearing in Iowa, from the middle of May till the last of August, are the following: Potentilla and Oxalis, common in the Eastern states, but more abundant here ; and their bright little faces are welcomed by the emigrant from Atlantic states, as early friends.

Ceanothus Americanus, common name Red-Root, which I understand grows east of the Alleghany Mountains, but was to me a stranger, is a small shrub, bearing crowded panicles of small white flowers, springing from the axis of the upper leaves. It is very abundant, quite pretty, and on a bright dewy morning recommends itself to our olfactories by its fragrance. It is a hardy perennial ; and I am inclined to invite, or rather encourage its growth around our dwelling as an ornamental shrub. I have never seen it more than from one to two feet high, but think it will attain a much greater height when protected from the annual fires which sweep over the prairie ; and in a cold, bleak climate like this, where rare shrubbery is liable to win-

ter-kill, it seems especially important to cultivate and improve our own natives, many of which, with half the care bestowed upon foreign plants, will no doubt rival them in loveliness. The Ceanothus is not, however, looked upon with much favor by the farmer, on account of its many thick stout roots, which break his plow-shares, and render it exceedingly difficult to till the *new* soil.

Aquilegia Canadensis, with its nodding head of chrome yellow petals, and bright crimson spurs, although possessing poisonous properties, as do all the Ranunculaceæ, would make a lively and graceful ornament to the parterre.

Baptisia leucophea, bearing long racemes of pale straw-colored papilionaceous flowers, is an ornament to the lawn or the prairie.

B. leucantha, coming several weeks later, is much more ragged in appearance ; rather a disgrace to its pretty sister.

Asclepias obtusifolia, A. pauperculia, and A. tuberosa, the latter of which is gayly colored, very showy, and a great bloomer.

Coreopsis triptera, abundant, but not attractive.

Organum majorana, Picnanthemum lanceolatum, and several other *labiates*, are here, which, as Hugh Miller says, "though *unfashionable* even in the days of Shenstone, who calls them plants of grey renown, still have their PRODUCTS *favorably received in the very best society*," and "which appear to have been specially created for the gratification of human sense."

The Rosaceæ, too, we have ; a "great family of plants," as Miller says, "of the very first importance to our race ; created late in the tertiary ages, only a short time previous to the appearance of *man* upon the earth." From this great natural order we are furnished with the important genera, Prunus, giving us two or three species of wild plum, one of which, even in its wild state, is really a delicious fruit ; Cerasus serotina, a very fine species of wild cherry ; Pyrus, with its crab-apple, not pleasant to eat it is true, except when preserved, but a beautiful tree, lovely in its bloom and fragrance ; Rubus, with its delicious blackberry and raspberry ; Fragaria, with several varieties of strawberry ; Rosa, with its beautiful wild prairie roses, which decorate our landscape for two or three months in summer with their lovely flowers, and in autumn with their bright red seed-cups ; and the Euphorbia corolata, blooming from May to September, very delicate, and the umbels becoming more forked, and flowering more profusely, by cultivation. No bouquet of wild summer flowers is complete without having this added as a finish.

Cassia chamæchrista, flower yellow, with dark brown centre, leaves pinnate and quite sensitive, height twelve to eighteen inches. It should find a place in every flower-garden.

Gentiana crinita, beautiful. Œnothera parviflora, and another, probably a *variety* of fruticosa, with pubescence soft as the finest silk velvet covering stem and leaves.

Petalostemum candidum, and P. violaceum, both species of which are abundant on the prairie, and wholly *Western ;* growth from one to one foot and a half high ; the head somewhat resembling clover, but longer, and not so thick ; foliage delicate ; whole plant pretty ; one species is white, the other a lively violet purple ; continues in blow through July and August.

Physalis viscosa, with fruit somewhat resembling small tomatoes.

Lilium, one species more like the Philadelphicum than any other described, yet not wholly agreeing with it.

One Iris, two Cypripediums; Achillea millefolium; Echinacea angustifolia, rough and ugly; and Sylphium laciniatum.

Echinocystis lobata, a climbing plant, with branched tendrils and inflated fruit vessels; has small white flowers, very numerous, in axillary racemes, sometimes a foot long, and always turning toward the sun; bears cultivation; would probably be improved by it; is a fine twining annual for a lattice.

Dysodia chrysanthemoides is abundant along old Indian trails, and wherever a beaten track or road is made. When crushed by the passing wheels it sends forth a perfume much like wild chamomile, (Anthemis cotula, which also grows here in abundance,) only much stronger, and in warm days the atmosphere becomes so freighted with it that one feels oppressed and faint from its inhalation.

My list is becoming long, and I fear tedious, so I will enumerate no more at present.

Yes, Mr. Editor, you shall have, at some future time, *seeds* of these my favorites; and hope you will admire them no less than I do, although you are surrounded by the cultivated flora of Eastern gardens and greenhouses, while *I* have, as yet, few other than these, the spontaneous growth of our prairies, in all their native wildness, and, of course, most fully *appreciate* their beauties.

[We shall be greatly delighted to have the promised seed; they shall have a choice place.—Ed.]

REVIEW OF THE GRAPE QUESTION.

BY A. S. FULLER.

(*Continued from page* 473.)

"Both Sides of the Grape Question" is the title of the second volume mentioned, and it might well be called *all sides* of the grape question, as all sides are treated of, but none definitely.

The volume contains three distinct essays by different authors. The author of the first essay, Mr. Saunders, being a practical gardener, does not attempt to give any new theories, or condemn any of the old and well-established principles upon which vines have been so long and successfully grown by skilful cultivators. Only a few of the most simple methods of training and pruning are treated of; and we have to regret that the author does not give some more definite and distinct rules for these, as it is generally admitted among vine-growers that the different varieties or classes are susceptible of widely different methods, and the one that is peculiarly adapted to one class is worthless, or nearly so, for another. For example, the Thomery mode, which for some kinds may be termed the perfection of all systems, is only adapted to a few varieties. Only those that will produce fruit from the base or lower bud can be grown on this plan successfully. Many of our native varieties, if pruned to the lower bud, produce only wood shoots instead of fruit, although this may be partially remedied by severe root pruning and summer pinching; but it requires a skilful hand to perform this operation judiciously.

The author's remarks on the propagation of our native grapes from single eyes, and that they will make better plants the first season (if properly grown) than plants of two years' growth as generally grown from cuttings, are very true, and worthy of consideration. We are well aware that many will still assert that the long cutting grown in the open air is the best, although facts prove the contrary. A heavy soaking once a week in the absence of rain, as recommended by Mr. Saunders, will not always keep them vigorous, and great care is needed in watering ; and it is only those plants that are making a vigorous growth and have a good drainage that can sustain a "soaking" with water ; and it may be observed that newly planted vines are oftener killed by profuse watering than by any other means. Little rootlets, that shoot out into water or very damp soil, find an uncongenial element, and consequently die.

The operation of grafting the vine, as he remarks, although exceedingly simple, generally fails in the open air, even when skilfully performed, except at the South, where the operation is not so hazardous. Mr. Saunders's remarks upon this subject, although true when understood, are calculated to mislead. There is much care needed in using vines propagated in this way. They have much strength, to be sure, but are very uncertain. We much prefer plants grown from single eyes, as they are generally much better and more likely to succeed. No more of the parent plant should be used in propagating than is absolutely necessary, the end desired being to create an entirely new and healthy organization, with all the good qualities of the parent, but with none of its defects. To accomplish this, we know of no better way than to grow vines from single eyes.

Mr. Saunders's remarks upon preparing the soil, planting, and the proper age and size of plants, are particularly good ; but allowing every leaf and lateral to grow undisturbed the first season, to encourage and secure a healthy root, as he recommends, is, in our opinion, far from being orthodox, and we think but few of our scientific grape-growers will agree with him on this point. If laterals are taken out early, nothing is lost, and one good leaf on the main shoot is worth more than many on the laterals, for giving strength and constitution to the plant, and more particularly for ripening the wood and roots to enable them to endure the winter without damage.

In regard to flavor or excellence of fruit, we think no one who has enjoyed good grapes will agree with Mr. Saunders. He has evidently *not perceived* the true excellence, for his remarks betray no knowledge or appreciation of the satisfaction that springs from the enjoyment of rich vinous grapes like the Grizzly Frontignan, Muscat of Alexandria, or our own Diana, Delaware, Lenoir, and several others of like quality.

We can not better illustrate the real merits of some of our old favorites when compared with some of the new ones, or the increasing desire to possess something better than Isabella or Concord, than by quoting from a letter which we received from a lady who had read Mr. Saunders's remarks upon the relative merits of the different grapes mentioned in his work. She says : "He talks as if he were speaking of the products of the vegetable garden, and did not know the *meaning of fruit*, never having been inspired by its enjoyments. Isabella, sweet, tame, but good enough for want of any thing better, only its skin smarts the mouth too much, and its juice leaves no pleasant sensation of refreshment. Concord, still more so, or, in Mr. Saunders's words, 'luscious and buttery,' like a poor plum, with a good deal

of the offensiveness of the fox added. It palls instead of growing upon the taste, and has no vitality. Diana, sweet, refreshing, with largeness of soul. Delaware, all life and spirit, always making the partaker more happy, and better. To these latter we recur as to dear friends who always do us good, and whose memory is a blessing. To the others we recur with kindness indeed, but with pity for their defects."

The *Second* Essay is by F. J. Cope. He begins by asserting broadly that "our whole system of fruit culture is based upon incorrect principles," and which, of course, he at once puts into nothingness, but with such a dazzling blaze of *fine writing* that in our blinded bewilderment we were only conscious of the wish that scores of tender Misses with uninked albums might be present at his next inspiration, each to catch a glowing line of his effusions! Unlike the classic historian Knickerbocker, he goes back to creation only to begin, and then he trusts but little to what is recorded in sacred writ, profane history, or fairy legend, regarding them only with a contemptuous nod, but relies firmly upon his own vast intuition and teachings of his mother Nature, whose lessons he seems to have sadly misunderstood.

The *Third* Essay is by J. M. McMinn. This attempt to classify the different varieties and species of the vine of the eastern and western hemispheres calls for but a passing notice; for the man who will tell us that the Herbemont and Norton's Virginia are esteemed the *very best* grapes in New York, certainly ought to travel before he attempts to instruct the people. One who will tell us that there are over one hundred and fifty *species* of the grape in a land where botanists have discovered but one, will certainly never mislead any one, however ignorant.

We hope, for the sake of the good reputation of all practical gardeners, among which we are happy to class Mr. Saunders, that he will revise his part of "Both Sides of the Grape Question," discard *foreign* matter, and give us a *practical work*, which we believe, from the good sense contained in the present volume, he is capable of doing.

THE NEGLEY PEAR AGAIN.

BY JAMES S. NEGLEY, PITTSBURGH, PA.

In the June number of the Horticulturist, Mr. Heaver, of Cincinnati, questioned my statements relative to the Negley Pear, in a manner which did not admit of a reply, except by positive contradiction. This I declined to do, preferring to embrace some more courteous opportunity of vindicating the merits of the pear than by disputing with a gentleman who has extended to me many acts of kindness. I now only refer to the subject out of respect for my aged and highly esteemed friend, Jacob Boyer, Esq., who has sent me a communication, and desires it published. I hope you may find it convenient to publish his letter, if only as an inducement to him to continue his contributions on the early fruits of the Alleghany and Ohio valley. I also cut out from page 13, in the *Transactions of the Ohio Pomological Society*, the following notice of the Negley Pear:

"A Pear from Pittsburgh, without name, presented by Mr. Negley, has been cultivated for fifty or sixty years in that vicinity, and was never known to blight, while trees of nearly all other kinds have been greatly damaged by

that disease. Fruit closely resembles Flemish Beauty, but is not that variety, nor quite equal to it in quality. Has never been able to identify it with any known variety, and, from all he can learn of its history, has no doubt of its being a seedling. From its remarkable hardiness of tree, productiveness, and excellence of fruit, he regarded it as a highly valuable variety, and would suggest that the society give it a name.

"The Society concurred in recommending it as deserving of trial."

Mr. Heaver will remember of being present with me on the sub-fruit committee. I would send you a copy of his remarks from my note book, but as he has forgotten them, I shall not repeat them. Messrs. Ernst, M. B. Bateham, J. C. Teas, and others present, expressed a strong desire to obtain scions for experiment. I sent them the coming spring. Mr. Teas, of Indiana, a gentleman of extensive experience in pomology, writes me that his grafts would have borne fruit this spring but for an untimely frost. I would send you a copy of the committee's report, which friend Heaver says classed it only second quality; but I do not find it published in the transactions of the Cincinnati Horticultural Society; perhaps the printer kindly left it out. In thankfulness to the Editor of the HORTICULTURIST for the unsolicited "extensive prominence" given to the Negley Pear, I have sent you a few specimens of second size, and sincerely hope that you will not be "most egregiously disappointed." As I was one of the purchasers of the Peabody Strawberry, I beg not to be reminded of it, especially as I never advertised trees of the Negley Pear for sale. I do not claim it as my seedling; requested no one to name it after me; did not publish a colored plate of it; did not publish a description of it in the HORTICULTURIST, until kindly requested by the Editor; because I have sent specimens all over the country for the past four years, and could get two hundred of my neighbors to certify to the excellence of the pear, and to the truth of my statements; further, I am perfectly indifferent whether it suits the taste of our Cincinnati friend or not, as the demand for such pears in the Pittsburgh market can not be supplied.

[The following is the letter referred to by Mr. Negley.—ED.]

SNOWDENTOWN, August 13, 1860.

Friend Negley:—I was somewhat surprised in reading over the strictures of Mr. Heaver, of Cincinnati, contained in the June number of the HORTICULTURIST, which I think were altogether uncalled for; the spirit and temper of the article not savoring of the good and kindly feeling that should always exist among fruit-growers, the oldest as well as the most honorable of all callings. It is the narrow-minded that whisper innuendoes, and without reflection condemn a thing before they know what it is.

But to the point in which my colleagues and myself are placed. In the autumn of 1856, (if I mistake not,) Richard J. Knox, Dr. Addison, and myself were called upon to act as judges in the fruit department; the Pear now in question was on exhibition, with a very general selection of pears. It was then for the first time seen and tasted by the committee; and as it drew the attention of the committee, and I think every other person in the hall, a number of fruit raisers, gentlemen who had been to various points at fruit exhibitions, all, with one voice, pronounced it the handsomest pear they had ever seen, visitors, men, women, and children, all stopping to see the pears, and with one voice pronouncing it the beau ideal of all pears they had ever beheld. The committee were very frequently asked if it was as well-tasted as

the appearance indicated. To satisfy ourselves and the public, quite a number were cut and distributed, all agreeing that the flavor was very superior. As they were not entered on the list for competition, the committee suggested the name which it now bears, with a discretionary premium awarded, and recommended it for further notice and trial. We had not the Cumberland Pear on exhibition, therefore could not compare it; it stood alone, and far surpassing in appearance the engraving in the May number of the HORTICULTURIST, being, I think, more like the Frederic of Wurtemburg, in Downing's large work on fruit. Thus far I have spoken of the appearance and flavor of the pear in question; but its bearing properties I know nothing about, only as was stated by the uncle who now owns the tree; but have no doubt of its productiveness, from the fact of having seen them in profusion at every horticultural exhibition since 1856.

I am averse to making myself conspicuous in any public journal, but as a friend I could not see a friend's motives impeached. I feel satisfied that you never forced either the fruit or name upon the public. I honestly believe the pear in question to be all you represent it, and as such, though old, will, if spared, plant a few trees for my own use and market, thinking it a great acquisition to our pear list; and all honor as well as profit should belong to you and old Alleghany county. It may not prove to be so fine in other soils or localities, but let it rise or sink on its own merits.

Yours, as ever, in truth,

J. BOYER.

GENL. J. S. NEGLEY.

[At the time we published Mr. Heaver's article, we requested Mr. Negley to send us specimens of the Negley Pear. This he did about three weeks since; but they were addressed to Mr. Saxton, and sent to his house. On discovering what they were, however, he brought us a specimen, which was at least three times the size of the figure in our June number, and a very beautiful object to look at; but on cutting it it proved to be very wormy and imperfect, and no fair opinion could be formed of its quality. We regret that this should have happened, as we felt a strong desire to see the pear in its perfection, after all that has been said about it.—ED.]

WILD DELAWARE GRAPES.

BY A BUFFALONIAN.

I DISCOVERED, Mr. Editor, upon opening your September number, that my incidental remarks upon this subject had really waked up "the opposing party," in the persons of both Dr. Garber and Mr. Prince.

I *had* seen a paragraph contradicting the statement to which I alluded, but did not understand it to be authoritative, not being aware that a committee had investigated the point.

The undoubted authority of Dr. Garber establishes the fact that the grape was *not* "found in a wild state" in the localities *visited by him*, but I do not see that the impossibility of its having originated *somewhere* in the country is thereby conclusively proved.

I have no sort of interest in proving the American origin of this fruit, beyond the natural desire that we should be able to claim as many good things

as possible, as belonging to the country. The Delaware being pretty well established as a *very* good thing, and as hardy as can reasonably be expected, I do not see that its origin is of any especial importance ; still I should like to see its pedigree *clearly* and *distinctly* traced, even if it should lead to the vineyard of Judge Provost, of Frenchtown, and to an imported vine.

I hope that Dr. Garber, who is undoubtedly competent to the undertaking, will write up the history of the variety, and bring out all the facts in point, from its importation, if it *was* imported, and from the seed, if it *wasn't*. Why does Mr. Prince wait for "another fruiting season" before bringing up *his* battery? Better for him to tell us what he knows *now*, and thereby assist "the public at large" in the "investigation," and afterwards produce any new evidence that may be elicited. I have heard Mr. Prince, more than once, expatiate upon "the land of the grape and the home of the vine," and the numerous varieties therein originating, and have no doubt that his version of the case would be quite convincing.

My own idea of the subject is, that the Delaware is not a native grape in the strictest sense, but a hybrid between native and foreign varieties, combining, as it does, the many good qualities of the latter with the hardiness of the former.

I had the pleasure, a few days since, of comparing the Delaware and Ontario, the latter, however, not fully ripe, but well colored. Its size, both of bunch and berry, was the only point of superiority that I discovered in comparison with the Isabella ; but the Delaware was exceedingly fine. A cross between the two, which should produce a hardy variety with the size and beauty of the Ontario, and the excellence in other respects of the Delaware, would leave little to be desired in native grapes ; and that such a variety will be produced can scarcely be doubted, when we reflect upon the astonishing number and the great excellence of the native sorts, both of grapes and other fruits, that we already possess, and the comparatively very few that were known twenty years since.

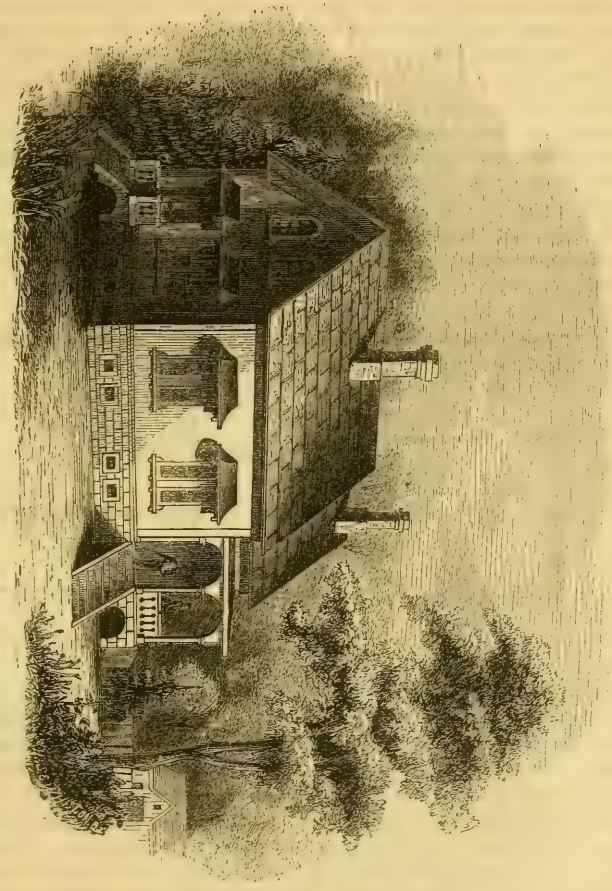
As to Dr. Garber's threat of "repeating the dose," I should have no objection to his dosing me with Delaware *grapes, ad libitum ;* the discussion of the subject on paper being somewhat less juicy, I shall not give him the same liberty, if he prefers that mode, but reserve the privilege of crying "enough," if I see occasion.

DESIGNS IN RURAL ARCHITECTURE.—No. VII.

A NEW ENGLAND VILLAGE RESIDENCE.

BY GEO. E. HARNEY, LYNN, MASS.

THERE is a style of building which seems to be peculiar to New England, or, at least, which seems to have been more generally adopted here than in the other States ; for one can hardly pass through a thrifty New England village without remarking the prevalence of those plain one story and a half "end to the street" cottages, standing a rod or two back from the highway, and approached by a straight, narrow path, bordered with box and shaded by a row of cherry-trees, while at the side are the kitchen and flower gardens, another path leading to the back door, and another row of cherry-trees to shade it.

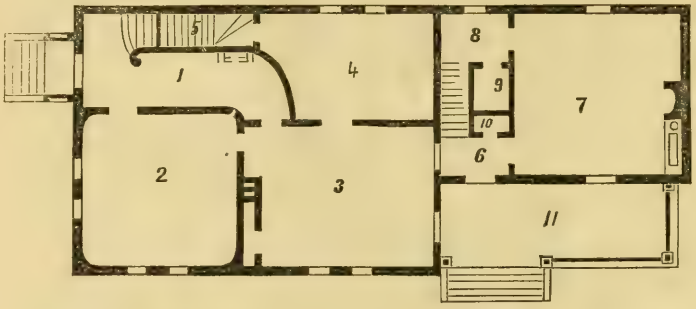


A NEW ENGLAND VILLAGE RESIDENCE.

These cottages, too, are invariably painted white—pure, unadulterated white—with the brightest of green blinds, and the reddest of chimneys, and the whitest of front doors; though there is one village that we now have in mind where all the front doors are painted white, with red and yellow panels by way of variety; but this, of course, is not general.

True, these dwellings many of them have an air of neatness which is really proverbial, and which in itself is very good; yet we do not consider them pleasing objects in a landscape; they are too bright—too obtrusive. Far prettier would they look if the color even were changed, and some modest neutral tint substituted for the glaring white; and far prettier still would they appear if some little ornament in the way of window and door trimmings, verandas, etc., were added.

With regard to the design on the accompanying page, it was originally just such a house as we have been describing, a perfect *fac simile* of hundreds of others in this city—very plain, very white, very neat. When called upon to alter and remodel it, we added the boldly projecting window and door hoods and the veranda, and introduced a few other ornamental details where needed, which serve to relieve it of its former bareness, and give it a better architectural character.



The perspective view shows the appearance of the exterior. The plan of the interior gives the following rooms: No. 1, hall, seven feet six inches by sixteen feet four inches; No. 2, parlor, twelve feet six inches by thirteen feet, opening into the dining-room, No. 3, twelve feet by sixteen. No. 4 is a bedroom opening directly from No. 3. There is a large closet under the front stairs at No. 5. No. 6 is a back entry, three feet six inches by six feet six inches. No. 7 is the kitchen, thirteen feet by fourteen. No. 8 is a good-sized pantry, communicating with the cellar by stairs under the back chamber stairs. No. 9 is a large store closet, fitted with shelves and drawers. No. 10 is a hat and coat closet, opening from the entry. No. 11 is the piazza.

The second floor is divided in the same manner as the first, having five chambers, a clothes-press, and a bathing-room.

The height of the first story is ten feet, and the second nine feet six inches.

Such a house as this may be built complete, including painting—three coats inside and two outside—for about eighteen hundred dollars.

EXPERIENCE *versus* THEORY.

BY JOHN ELLIS, FOX MEADOW GARDENS, N. Y.

Mr. Editor :—We have no desire to annihilate Mr. Eaton, nor any other gentleman, especially one who has the power and faculty of contributing one jot or tittle to the great cause of Horticulture.

In discussing any matter or topic in this journal, we have nothing to do with personalities, or individual, personal, good or bad qualifications, and I am always sorry when writers so much forget themselves as to fall into this great error.

Mr. Eaton has not fallen under our *great displeasure;* the only thing he seems to have fallen into is a *great mistake,* and this is nothing more than all humanity is liable to. Do not let us mistake a man's experience, his practice, his system of doing things, for the individual man, because it is the former *we have to do with,* and the latter, *nothing.*

Do not let us be misunderstood on this point. We have nothing to do with Mr. Eaton ; but we have to do with his works, his practice, his experience, and his theory. So from this time out, Mr. Eaton, let us say less of self, less of that which flows from the back of the head, where the animal seems to reign triumphant, and cultivate more of that which dwells, or ought to dwell, in the front and upper region of this same brain. It will have a much better influence on the minds of those readers who are, perhaps, younger than you or I, and a more salutary influence on the spirit of the horticultural profession generally.

Now, friend Eaton, let us reason together. In your reply of last month you say, "but still it is a slight comfort to be informed that I have no particular objection to your plan," etc. Why did you not, as an honest man, finish out that sentence, and not stop short just at a place in the sentence where it suited your own convenience ? You may as well have given the whole of it, for be assured those interested in this question will be sure to read it, and read it very carefully too. The remaining portion of the sentence that you wilfully left out, reads thus : "Still, to commercial growers, who, from necessity, ought to obtain the very perfection of fruit, I should by no means recommend it." Now you see, friend Eaton, this sentence, read consecutively as it stands in print, really means just what I intended it to mean, and not that which *you* would have it understood to mean. The exception I made to this (in my opinion) badly-arranged plan was, where a gentleman may fancy a whim, or hobby-horse, and has plenty of money that is his own, why of course he has a right to carry out any hobby he pleases. It was, and is, distinctly stated, that in this case I had no particular objection to this so-called plan ; but in every other case, great objections. You say, "I will endeavor to show that I am not so entirely wrong in every particular as he endeavors to prove."

I have studied your answer very carefully in every particular *in question,* but honestly I do not see that you have shown or substantiated any one point in connection with the right or wrong of your plan. The only thing you have *distinctly* shown is, how to ask a lot of questions : wanting to know what kind of *sheds* I grow grapes in ; whether I grow vines on the back walls or not ; if the wood ripens on the back-wall vines ; and have I *ever, ever, ever* grown grapes or vines in a span-roofed or curvilinear house.

Now what on earth has all this nonsense to do with the question at issue? Suppose I *never, never, never* grew a grape in my life, or that I *never, never* saw a vine, and could show you by sound common sense and reasoning that the plan you proposed for a man to get his living by in growing forced grapes for market was a miserably poor one; would that invalidate my suggestions if they were truthful and correct? This plan is intended for the man who knows not how to build; the man who knows not whether a house should stand east, west, north, or south; whether it is best to have all glass, or half glass, bricks, and mortar; whether for money making, or profitable and advantageous, it is better to have his glass houses *all above* ground, or *half under* ground; which of these arrangements will take less fuel, and in the end cost less. Plans are not intended for those that understand this business, but for those that know comparatively nothing about it.

The man who understands this subject does not require either your advice or mine, so that your plan is, *in reality*, got up for the novice; and it is *your bounden duty* to tell him *where*, and *in what* are the "many advantages that more than counterbalance" even houses erected on the old lean-to shed principle.

Here comes this novice with a few hundred dollars in his hand; he has been informed that growing forced grapes for market is a good, profitable business (poor fellow!); he wishes to launch this hard-earned money in the speculation; he knows not how to build; he is told that the earlier he can get his fruit into the market, the higher is the price. How shall I build? asks he. Which is the best plan? Now for this man Mr. Eaton proposes a plan which we were naughty enough to call the "*cross-stick*." On this plan the early forcing-house is placed at the north. This said man wants to know if that (*north*) is the *best position* for said *early house*, and if so, why? and if a flow and return pipe in a house twenty feet wide, *twenty feet high*, and forty feet long, with glass on all sides, will radiate heat sufficient to have a crop of grapes ripen *early in June?* being given to understand that the said crop takes *nearly* six months to fully mature, consequently would have to commence forcing said house *early in December*. Further, said man wishes to know, previous to erecting this plan, what possible means there are of *retarding* the house marked D more than that of C. Said man wants to know, as C and D face the south, what on earth there is to prevent these two houses breaking together? and also where is the *pecuniary* advantage of having this succession? admitting the *possibility* of having a succession.

Let us see what Mr. Eaton says himself on this point, after giving us the plan in question. It must be remembered that we said, that "in curvilinear houses we invariably find the fruit better on one side than the other." Mr. Eaton says, this is true of houses placed on an "east and west line." Now it so happens that just half the plan in question stands on this line; consequently *one half* the fruit on this line must be inferior to the other. What is this man we have been speaking of to do with this inferior fruit? Will it fetch as much money as the other? Common sense says, No.

But there is one point in Mr. Eaton's remarks that I had almost forgotten to give him *credit for*, and had I omitted it, it certainly would have been very wrong. It is in reference to the vines planted on the *north* sides of the east and west line: he says, "for if it is an object to force grapes at all, the difference of *fifteen to twenty days* in time of ripening between the

Chasselas, etc., and the Hamburghs, is essentially worth something, even to a 'commercial man.'" Ho! Mr. Eaton! When a man speaks before the public, *faith it is printed.* What is *printed* for you on this point already, in the April number of this journal? It reads thus: "If it be desirable that the time of ripening should be nearly *equalized through the whole house.* it is not difficult to select *earlier sorts* for the *northerly sides,* which will *naturally be retarded until their maturity nearly corresponds with those in fruit.*"

Now, friend Eaton, which of these two stories will you have us believe—the *first,* or the *second?* Will these self-same vines be *naturally* retarded on the *north sides* of the house, as you would have us believe in the *first* statement? or, will they be ahead of the Hamburghs fifteen or twenty days, as you would have us believe in your *second* statement? Which ever of these *two statements* will suit you best just now under present circumstances, we will accept.

My dear sir, this discrepancy is too glaring. When you tell us these vines will be *naturally* retarded on the north sides, we certainly believe you; but admitting, for the sake of reasoning, that these Chasselas varieties are ripe some fifteen to twenty days before Hamburghs, and admitting all that we can in your favor, will they *weigh* as much in the *scales?* What amount is it in dollars and cents in a man's pocket, to have a bunch of "Early Sweetwaters, Frontignan, or Muscat Blanc Hative," some few days before Hamburghs and Muscats? Will the former named varieties (early forced) weigh half a pound a bunch, when the Hamburghs, under the same conditions, will weigh a pound? If they will not, *where is the pay?* Every man that has ever grown and *weighed* grapes, knows they will not. Now if these early sorts do not come in fifteen or twenty days before the Hamburghs, but come in the same time, why of course they are not worth near as much; so, with deficient weight, and deficient in intrinsic value, compared with the latter varieties, we say they pay no man to grow them. This may be considered "*self-sufficient,*" "*captious,*" "*practical gardener*" like, but we give our experience on this matter, and wish it taken for just what it is worth, *and nothing more.* I do not deny that the "Chasselas" varieties may be sold in Buffalo at prices to suit the grower there. We will take Mr. Eaton's word for it. But suppose some "*wide awake*" should run up there and put Muscats in that market at the same price the "Buffalonians" were selling the Chasselas for, what would the Chasselas be worth per pound then?

Mr. Eaton can instance a very good forcing-house that was not only "glazed *all round,*" but with the exposed end facing nearly the north. They did not grow grapes, but plants *infinitely* more tender were forced successfully. What plants were they, Mr. Eaton, that require more heat than a Muscat of Cannon Hall? Do pray tell us, and let these "fountains of all horticultural knowledge" know.

This house, too, "being a part of a range of sufficient extent *to require* some three thousand feet of pipe, worked from one boiler." This sentence seems to me to be written in a very ambiguous style: "*to require* some three thousand feet of pipe, worked from one boiler." Does this mean that three thousand feet of pipe are actually worked by one boiler? or does it mean that it is *only wanted,* and that it is *still now wanted?* A very good boiler this, if it is in actual operation; but if it dwells only in the regions of ideality, it amounts to nothing. Who is the maker, Mr. Eaton, and *where*

can it be seen? Tell the readers of this journal *where* this wonderful piece of machinery really is, so that some one of us can come up to Buffalo and lay our hands on its iron sides, and cry aloud to the world,

VERILY, THOU ART THE BOILER!

[Mr. Ellis having omitted to state what kinds of houses he grows his grapes in, we supply the information, as it may be of use to Mr. Eaton in his reply. His forcing houses are all *lean-tos*, but by no means *sheds*, being plain, but neat, substantial, well-built working houses. One range, some three hundred feet in length, starts about one foot from the ground, with a low pitch, and is the first forcing house. Another range, about five hundred feet in length, starts some two feet from the ground, has a steeper roof, and is the second forcing house. There is still another range, similar to this. The roofs of all these houses are straight. There is but one cold house, and this has a double pitch curvilinear roof, and works well; the wood, foliage, fruit, color, and bloom, all being excellent. This curvilinear house is placed between two of the forcing houses. This discussion naturally involves the most important points in grape culture, such as the best position for a house, the best form to give it, the best mode of constructing it, the best mode of heating it, the best varieties of grapes to grow in it, &c., and may be conducted so as to bring out a vast amount of information useful to all grape growers. We suggest that Mr. Eaton and Mr. Ellis both forget themselves on the merits of their subject.—ED.]

CULTURE OF THE JAPAN LILY IN POTS.

BY DANIEL BARKER, GARDENER TO B. K. BLISS, SPRINGFIELD, MASS.

LILIUM LANCIFOLIUM, with its many and beautiful varieties, is very easily cultivated, and no plant is better adapted to the amateur; and when well grown in pots, they are among the most beautiful of all pot plants. Their fragrance and great beauty render them very useful for decorating the greenhouse, conservatory, plant cabinet, or sitting-room.

For good-sized bulbs the pots should be from ten to fourteen inches in diameter. Plant three bulbs in a pot, selecting such as are double crowned, which are much more suitable for pot-culture than those with single eyes. Plenty of drainage at the bottom of the pots is quite essential. The compost most suitable for potting is three parts good peat soil, and one part fresh loam, from an old pasture, with the sod well rotted, and a small quantity of coarse river sand. Fill up with the compost to within four inches of the rim, place the bulbs at equal distances upon the surface, and cover with another inch of soil, leaving the crown of the bulbs exposed. After planting, which should be from the middle of November to February, they may be placed under the stage of the greenhouse, where the drip from watering will not fall upon them, or in a light cellar, where they are not affected by frost *or a furnace* wherever they are placed. Let them have plenty of air whenever circumstances admit of it. At this stage of their growth they will require but a moderate supply of moisture, keeping the soil in that happy medium between wet and dry. As they advance in growth they will require it more frequently. Whenever the green fly make their appearance, let them be destroyed without delay by fumigating with tobacco smoke. About

the middle of April they will commence to grow rapidly, when they will require a greater quantity of water, and will be benefited by frequent syringing during mild evenings. They will now require an abundance of fresh air. If in frames, raise them by placing blocks of wood under the corners, and remove the last entirely during mild days. By the end of May they will require to be turfed up by placing lumps of peat round them above the rims of the pots, leaving a space of about three inches round the stem, which must be filled up with fine sandy peat; into this they will root, which will be of great benefit to them. The stems must be kept tied up, and the plants removed to the greenhouse or some convenient place where they can have an abundance of light and air. Continue to keep a watchful eye upon them for green fly. About the end of June commence to water them regularly with soot water, which is made by placing one peck of soot in eight gallons of soft water. Stir it well, and after it has settled skim off the top, when it will be fit for use; with this continue to water until they show signs of flowering. When the flower buds appear, the flowering may be hastened by placing them in a warm greenhouse, kept rather close and moist, as they will not draw up after they have reached this stage of their growth, and will bear a high temperature, if kept well supplied with water. Where there are several pots of these, it is desirable to have them flower in succession, which can be done by placing some of them in a cool, shady place at the same time that others are placed in the greenhouse. As soon as the bloom is over, place them where they may receive the full influence of the sun's rays in order to ripen the bulbs well. Whenever hard rain-storms occur, turn the pots on their sides. Diminish the water gradually until they are quite dry. When the stems are dead, cut them down, and place the pots in some dry place until the next season, when they may be turned out of their pots, the best bulbs selected for pots, and the rest planted out in the garden.

[Very seasonable and very good. Anybody ought to be able to grow these Lilies after reading such plain directions.—Ed.]

THE GRAPE REVIEWER.

BY WILLIAM BRIGHT, PHILADELPHIA.

The second part of Mr. Fuller's Review of the Grape Question, in the October number of the Horticulturist, is so grossly erroneous in the description of my proposed inside border, that I feel called upon to reply to it. Mr. Fuller quotes from Hoare on the Grape, to show that he had suggested an inside divided border, and consequently that my border is not new. But (as I have said before) Hoare did not suggest a *detached* border, in which the originality of my border consists; and yet, the very evils which were complained of in Hoare's inside border, Mr. Fuller attempts to fasten upon mine.

Mr. Fuller says, "These divided borders with *impervious bottoms* have been thoroughly tried in England, and in a few instances in this country; and we regret to say that in most instances they have failed to give satisfaction."

"Again," says Mr. Fuller, "the fine sediment that will descend to the bottom [of such borders] and fasten itself there, will form a thick puddle that

will prevent the surplus moisture being carried away, and the roots that come in contact are consequently destroyed."

Mr. Fuller adds: "Thus it appears that *this very border* that is recommended by Bright, and put forth as new, is an old feature in grape culture, and one, too, that has been condemned by some of our best and most experienced gardeners."

Now the fact is, that my inside border has not an *impervious bottom*, as Hoare's had, nor does it rest on solid concrete. The bottom is formed of open, dry brick-work, elevated four inches above the floor or concrete, and *it is as porous as a sieve.* Mr. Fuller constantly speaks of Hoare's border as a "detached" one; but the very fact that it was not *detached* (or separated) from the front wall, and from the floor, as mine is, and that it was not readily and perfectly drained, formed the reasons why Marnock "doubted its practicability," and Johnson pronounced it a "failure," as stated.

No "thick puddle" can ever stand in the bottom of my detached border, which is, to all intents and purposes, a large open brick pot, suspended in air. The water must stand five or six inches deep all over the floor of the house, before my border will cease to part with all excess of moisture beyond that which the soil is capable of holding in its pores or substance. The only difficulty that I have found with this border is, that if not properly made it drains too freely, and requires a larger amount of water than borders resting upon concrete, or upon the soil. But this difficulty is more than compensated by its peculiar merits. The perfect control of moisture which the detached border affords was noticed in my article in this journal last month, and the vast importance of its thorough drainage was fully stated.

I now reassert my claim to originality in this *detached* border. I did not know before that it was so thoroughly original. I thought it was, because I had never seen or heard of one so made; but I did not positively know that one like it had never been made or suggested. These attempts to prove that it is not new, exhibit most distinctly its originality and merit.

Mr. Fuller says my detached border is "an old, condemned feature in grape culture." In view of the facts above noticed, and as Mr. Fuller is fond of antiquarian matters, I think I may be permitted to quote, as applicable to his case, an epitaph on a tombstone in England, erected somewhere about 1731, over the remains of one of his namesakes, which reads as follows: "Here lies Fuller's earth." I trust, Mr. Editor, that you will consider this remark as entirely within the limits of that "friendly way" in which you propose to have this discussion conducted. As Mr. Fuller permitted the article in question to go to press after personally inspecting my border at Philadelphia, during the late session of the Pomological Convention, seeing with his own eyes that it had not a wet, *impervious bottom*, resting upon solid concrete, I think if anybody has violated the proprieties of horticultural discussion, it is himself.

The inside detached border I consider the best in use for grape culture under glass. I am constantly introducing this border into the most elegant and costly houses around Philadelphia, having just finished seven fine houses on this plan; and it scarcely suits my ideas of truth and justice to have my plan so perverted in the description, and then denounced as "old, condemned, and worthless in practice," as it has been by Mr. Fuller. You, Mr. Editor, have seen my border, and know the facts, and I confidently appeal to you to let me be heard, in my own rude way, in its defence; and as you

propose to act the part of Judge in this matter, and to "sum up" by and by, I cheerfully submit the case to the decision of your genial and intelligent mind.

May it please your Honor, Mr. Editor, I rest chiefly upon the following as new and useful hints in grape culture, recently presented to the public by myself:

1st. Bright's method of growing grape-vines in the grapery and vineyard. All the new wood to be produced from buds within a few inches of the root, and not from any long stem or branches. Wood alone to be grown one year, and fruit the next. Vines to be cut entirely down every other year, after fruiting. Short canes, carefully stopped and concentrated, with no long arms or laterals. Plants to be two feet apart in the row, so as to keep a fruiting and a growing set constantly on the same border or vineyard, (half fruiting and half making wood.) Is there anything new or probably useful in this?

2d. Bright's inside *detached* and divided border, separated from the front wall of the house, and from the floor, by a four-inch air-flue, thoroughly pervious to water, and perfectly drained, so as to obtain complete control of the heat and moisture of the border. Has precisely such a border been proposed by any other writer, or has such a border ever been in general, or even limited, use?

[We must do Mr. Fuller the justice to state that his article was sent to us as a whole, and that we divided it as a matter of convenience, on account of its length. It is all printed as originally written before Mr. Fuller's visit to Philadelphia, and he has not seen it since. We must also here state that Mr. Bright's inside border has not an *impervious* bottom, and that there is no possibility of water accumulating in it. Mr. F. has now seen it, and will of course correct his misapprehension in this respect. We have noted your points, Mr. Bright, for our "summing up."—Ed.]

DWARF PEARS AT THE SOUTH.

BY H. A. BIZZELL, CLINTON, N. C.

By request I willingly give you the information concerning my pear-trees, so far as I am able.

The pears I sent you were grown upon dwarf trees seven years old, that have now produced full crops for the last three years. The trees were grafted upon the orange quince, in the spring of 1853, and transplanted into my vegetable garden in the spring of 1854 in the following manner:

I excavated the earth in holes about two feet square, and the same depth; filled these holes up to within about six inches of the top with a compost of equal quantities of vegetable mould, refuse from a smith's forge, and well-rotted stable manure. On this I set the trees just so that the junction would be beneath the surface, and filled the remainder, that is, around the roots, with surface soil, taking pains that the roots should be distributed evenly and horizontally.

They were planted just ten feet apart on one side of the walks, and after setting out, I cut them back to about eighteen inches. For the first year, I simply rubbed or pinched off all except about three or four buds nearest the

top, intending to make the most erect branch a leader in some cases, and in others to prune in the form of a large and deep vase.

The second year I had but little pruning to do, except when I had leisure. At any time when I saw a cross-shoot, or one that was likely to be so, I either pinched it or cut it off. Since that time I have seldom used the knife upon them, except to supply my friends with cuttings ; in such cases, you know, we generally take young shoots.

I never thin out fruit of any kind, but let the trees bear as many as they will. I frequently use props or forks under the branches, to keep them from breaking under their burden.

A friend of mine counted on a branch of a Washington tree seventy-five pears, and the branch was not over one inch in diameter. I have on one or two occasions, when one of these trees should be slow to bear, cut the main branches severely in the month of July, or root pruned in the same season, but only in two cases that I now remember.

Most of my dwarf pear-trees are branched from very near the roots, not having trunks more than from four to twelve inches in length. The trees are now from seven to fifteen feet in height, and the stems or trunks now from five to seven inches in diameter, with large and spreading heads.

The soil is naturally a rather weak sandy loam, with a clay subsoil. In this case the clay is within ten or twelve inches of the surface, but the subsoil is dry. This region is slightly undulating, but not hilly ; about the intermediate line between the sea-coast and the hilly regions of our state. The Pinus palustris, or pitch-pine, is the chief growth on the level lands. On the swamps a much richer growth. I do not exactly know the elevation above tide-water, having no barometer in our town, but I think I have been informed that we are about two hundred and thirty feet above.

Manure does well upon our lands, and I am sure that much of my success in raising pears is from their situation, where they receive clean culture and plenty of manure. I have trenched my garden as deep as eighteen inches, and filled the trenches with dry muck and stable manure.

The trenching was done four years ago. Since then I have given a fine top dressing to it every winter, which has been hoed or plowed in the following February.

I once used guano and night-soil on this garden ; either of these is too strong for dwarf trees, and I lost several with blight that year. I have a friend that uses quantities of guano every year, (as he is a market gardener,) and every dwarf pear in his garden either dies entirely, or shows signs of blight. I think a good top dressing of night-soil, composted or not, will kill any dwarf pear-tree in this region, and a good dressing of guano will do the same. This may be a mistake of mine, but I firmly believe it, and I think blight can as frequently be accounted for in this way as in any other. Bad management, unhealthy manures, any where in the vicinity, cause blight. You may consider it egotistical if you like, but I can not refrain from saying that last year I gathered from one tree of the Beurré Diel pear one hundred and seventy-one pears that would average from ten to twelve ounces each, and the tree is not more than seven feet high. This year, from a tree of about the same size, I gathered over three hundred Seckels, one of which I sent you, but not the largest.

[We have to thank you, Doctor, for the valuable information contained in your article. Your trees were well planted, and in a most excellent com-

post. The vegetable mould we are not surprised to find in your compost, for we had already expressed the conviction to Dr. Grant, that you had used it largely in growing such pears as you sent us. If you have read any of our pear articles, you will have found that we give vegetable mould a leading place; you could have used nothing better. Your summer pruning is judicious, and done at the right time; and we approve your plan of branching the tree near the ground. Your location we judge to be an excellent one for both the pear and the grape: we gather many useful hints from it. You will do well to let guano alone; we have taken frequent occasion to discourage its use, for we believe it to have done more harm than good, especially in inexperienced hands. We had supposed that you thinned the fruit freely in order to produce the beautiful specimens you sent us, and are surprised to learn that you do not. You must be careful not to carry your indulgence too far, for there is danger of impairing the constitutional vigor of your trees. Now if you get such results without thinning, what may you not do with it? Try it next year on a portion of your trees, and let us know the result.—Ed.]

THE CRIMSON CAMELLIA-FLOWERED PEACH.

(*See Frontispiece.*)

BY THE EDITOR.

We present, this month, for a *Frontispiece*, a drawing of a comparatively new double-flowering Peach. The flower, it will be seen, is of much better form than the old kinds, and also of more brilliant color. It is an appropriate and beautiful object for a lawn. The double-flowering peach is seldom properly grown, being left mostly to take care of itself, in consequence of which the branches become naked, and the whole tree unsightly. It should never be planted except on a dry spot. Enrich the soil with old manure, spread the roots out carefully, and in filling up work the soil in between the roots with the hand. Let the tree branch within twelve or eighteen inches of the ground, and every spring cut in at least one-third of the new growth. The effect of this will be to keep the tree compact, and well furnished with young wood and leaves, and the bloom will be more abundant. A circle round the tree should be kept free from grass and weeds, and every second year a top-dressing of old barn-yard manure may be applied with advantage. In forking this in, be careful to disturb the roots as little as possible. A spade should never be used for this or any similar purpose. If these directions are followed, the result will be gratifying indeed.

EUROPEAN PARKS.

BY HOWARD DANIELS, NEW YORK.

Quatreniere de Quincy, in his essay on "The Nature, the End, and the Means of Imitation in the Fine Arts," draws attention to the difference between *copy* and *imitation*. To me the difference is clear enough, and, no doubt, is so to your readers; at all events this is not the place for a necessarily long disquisition on the subject. In this paper I purpose to give a

short account of some of the European Parks from actual observation, convinced that at present, when park making is here becoming an institution, such matters can not be without interest.

The leading characteristics of the European public parks are breadth of lawn, extent of foliage, and in most cases a tolerably complete system of drives and walks. They are regarded as the lungs of the cities to which they are attached or by which they are surrounded; and, whatever may be their shortcomings in an artistic point of view, there can be no question of their utility. In all the older parks, such as Hide Park, ample accommodation for riding, cricketing, boating, and the like is provided. Regent's Park has no boats, but a very good gymnasium furnished with the usual ladders, parallel bars, swings, &c., which is extensively used. Battersea Park and Victoria Park of London, and almost all the modern parks attached to the great towns, such as Birmingham, Manchester, Leeds, Sheffield, and Liverpool, are similarly provided, some of them with a gymnasium for the exclusive use of the fair sex. The sight of numbers of persons engaged in active games at once, stamps the character of the park as a place for popular recreation. as the seclusion, shade, and general retired air of Kensington Gardens mark them as the resort of the ultra fashionable society of London.

So little has hitherto been done to the Victoria Park, and that little so indifferently, that it is unworthy of criticism, as is also Battersea Park; though much has been done there, it is acknowledged in the profession to be an example of every thing which is not praiseworthy. The new gardens at Muswell Hill I have not seen, but from the names of those engaged on the work, I form high expectations. The grounds of the Crystal Palace at Sydenham were laid out with a considerable error as a basis of operations. These grounds are too irregular by nature ever to admit of any successful treatment in any but the natural style. I have no doubt the error was caused by the excessive care used by Sir Joseph Paxton. While studying the grounds he had a glazed perch set up high on the central part of the palace: there he would sit by the day, and, becoming accustomed to the flat appearance of the ground as seen from that height, overlooked the difference which a descent to the level produces. This mistake has utterly ruined the grounds in the vicinity of the palace. The geometrical style is only satisfactory as long as the geometry is apparent; it avails little to know that by climbing a hill and descending a slope half a mile off we shall find an exact counterpart of the object we are then viewing: we can not take geometry on trust; the *pendant* must be seen to be of any value. The terrace walls are also very faulty, presenting the appearance of having sunk into the earth, and to be still sinking. Nothing is more common than this fault; a retaining wall or abutment of architectural character is generally marred by having no plinth corresponding to the slope of the earth embankment. This need not be parallel to the slope, on the contrary a series of steps would be best. The gymnasiums, archery, and cricket grounds are numerous and extensively used; and the water display, when the fountains work, is unequalled. And here let me say, that the fountains are just what they should be: a water composition should have water for its principal feature; and while for a comparatively small flow of water architectural accessories are advantageous, when a very large body of water is set in motion, as at Sydenham, any addition of vases and urns, spouting marine monsters and the like, would mar

the whole thing. If made colossal, they dwarf the water display; if made of life size or little larger, they look puny and toy-like. I am now speaking only of spouting fountains; cascade fountains are quite different, and may be much enhanced by architectural surroundings.

The public parks of Manchester are not yet very attractive to the stranger; they have considerable merit, and in time will be very pleasing. The same may be said of those of Sheffield and Leeds. Of the arboretum of Derby, however, I can speak in the highest terms: with only fifteen acres of ground at their disposal, the trustees have succeeded in giving to the inhabitants of Derby a great boon, and to the public a model of what may be done by the judicious expenditure of moderate means. It is needless to say that in this case there was no amateuring it; the gentleman who undertook it was of known ability.

The parks of Liverpool have been so often described that I fear to weary your readers by referring to them at the length they deserve. This much, however, I think it well to state: the great charm of the Prince's Park is to be found in the beautiful style of the garden and the high order in which it is kept, while the great charm of the Birkenhead Park is its intricacy and quasi snugness; this latter quality Englishmen prize highly. I can not, however, dismiss the Birkenhead Park without remarking the very great beauty of the sheets of water. From no point are the limits discernible; all is easy, graceful, and natural, with a single exception where the banks approach each other very closely, both slopes being convex. The walks by turns approach and leave the margin of the lakes; at every ten yards a new vista presents itself: the intricacy produced by an apparently simple plan is marvellous! I made nearly a complete circuit of the first lake without knowing that I had done so; it was only by recognizing one of the bridges that I found out where I was. The entirely different aspect which the banks of the lake continually present is completely illusive. This work, in short, is in the highest style of art, and presents a marked contrast to the celebrated Bois de Boulogne at Paris, where the water is very much like an irregular canal; every part can be seen from one end, and the drives follow the margin with scrupulous and hideous exactness. The Bois de Boulogne shows the hand of the military engineer, not the fancy of the landscape gardener. Strange as it may appear, the French, with all their elegance of character and sublety of *esprit*, are entirely without correct notions of landscape gardening. Since the time of Le Nôtre in the days of geometry, long straight avenues and square clipped gardens, they appear to have made no approach to a better style. The reason, I believe, to be this: No Frenchman cares a straw for nature; no Frenchman ever leaves Paris from choice, or is ever without light-colored kid gloves, a Palais Royal cane, and varnished boots. Besides, they care too much for what they eat. A prospect which can be enjoyed by Monsieur Lèotard and Mademoiselle Rigolboche from the windows of a suburban restaurant after a too hearty dinner, is their only notion of *la campagne;* nature is with them associated with *la province*, than which the dictionary contains a no more hateful word: it means bad dinners, bad *toilettes*, bad beds, and bad company. If any proof were needed, it is contained in Chateaubriand's sentimental tours, in Lamartine's high-flown rhapsodies, in every unfledged poet's soliloquies. George Sand, however, in the *Maitres Sonneurs* and other works, shows considerable appreciation of the grandeur of park scenes in natural forests, and with all her faults has the material in

her to make a good landscape gardener. In all French works the military heel stamps the sod, and leaves a mark.

The waterworks of Versailles and St. Cloud are very fine, the architectural decorations of the fountains in many cases good, the terraces imposing, and, where a geometrical arrangement is suitable, these works possess considerable grandeur. The long broad *allées*, so suitable for display, are adapted to a people gregarious in their pleasures. Grounds of this character, however, require to be filled with people. Versailles is nothing without 20,000 people in front of the building; under other circumstances it is as melancholy an an empty ball-room. On this account, its suitability to display, there is no style so fit for a public park of moderate dimensions, if surrounded by a city. Where we can never get so far from the boundaries as to lose the prospect of chimneys and roofs, it is useless to try to imitate the scenery of the Adirondack Mountains. However well done, it can never rise above mediocrity, and will resemble the Swiss *châlet* and waterfall in the Colosseum in Regent's Park, a thing very well executed, and really illusive, but nothing better than a conceit considering its situation. Works like the Tuileries gardens admit of no style but the geometric; the same is apparent in the Champs Elysées and the Luxembourg gardens. There was, however, nothing to prevent Versailles, St. Cloud, or Fontainebleau from being laid out in the natural style. Geometry need not, in such cases as city parks, be carried out in detail. All that is necessary is, to get enough geometry to produce the sensation of regularity; our way should be clear and direct, our relative position with the lines of the park, its compass points, should never be doubtful. We must feel rather than see that we are going in the direction we intend. To produce this does not require so much skill as common sense, a quick and correct eye to take in the advantages of the ground, and judgment to choose the best means to the end. For the purposes of immediate enjoyment, space for *fêtes*, promenades for the court, &c., the French royal palace grounds are eminently well adapted, and Le Nôtre is acknowledged to have been a professor of brilliant talent. That he did not design in what is now known as the natural style, is due to the age in which he lived, and the influences under which he worked.

In my next I propose to notice some of the leading American Cemeteries and Parks.

FRUIT GROWING IN IOWA—ITS DIFFICULTIES.

BY H. D. IVES, EDDYVILLE, IOWA.

To aid me, an amateur fruit-grower in central Iowa, I have for some time been a subscriber to four Agricultural and Horticultural Journals, but as none of these papers has discussed the subject of fruit-growing as applicable to this climate, to the extent desired, I became a subscriber to the HORTICULTURIST. I am now in receipt of two numbers of this paper, and may say that I am much pleased with it. I trust you have any number of subscribers in this State, and for the reason that there are thousands of the citizens of Iowa who are interested, and deeply interested, in the subject of fruit-growing; and they need just such a journal as yours is, one that is to a great extent devoted to this subject.

You may know that up to 1855, Iowa had some reputation as a fruit-growing State, and that the HORTICULTURIST of that year published several articles giving an account of "Iowa monster productions," "Magnificent Apples," "Peaches near 12 inches in circumference," and "Pears weighing 1½ pounds," etc. Now, while these accounts were no doubt true, yet as fruit-growing at that time was mostly confined to a portion of the country adjacent to the Mississippi River, the State, as such, could not be said to have established her reputation in this respect; and even the portion of country mentioned had not then passed through the ordeal of the winter of 1855–6. But whatever may have been our character at this time, we can hardly be said to have a good reputation for fruit-growing now. Indeed, perhaps nine persons out of every ten who have lived in Iowa during the last ten or fifteen years will say this: "That there is no use trying to raise fruits here," that "the climate is too changeable," "too hot days in summer and cold ones in winter," or that "the soil is too rich," etc., etc. Now, without pretending to agree with the public as to the particular cause of our failures, or of all of them combined, which it is alleged have produced this result, yet the experience of the writer is in conformity to that of the mass of the people, or, in other words, that the results justify a verdict of this kind.

I have lived in the portion of Iowa known as the Des Moines Valley for sixteen years, and to the present writing have never seen a *Pear, Quince, cultivated Peach, or Plum, growing here.* We have a plenty of the wild plums, but the winters are said to be "too cold" for the cultivated sorts. During a few of the years mentioned, say three, and at most four, some few have been successful in raising seedling Peaches, but these have been exceptions to the rule. Now what is to be done? Shall we stop making experiments, and thus confirm our already poor reputation? We say not. We have already *learned* from experience that we have some grounds for hope. For instance, we have learned that *certain kinds* of Apples may be raised here, and with very great certainty; and the same is true of Grapes. Pears are growing in some places on the Mississippi River; why may they not be grown here? And so of the Quince, Peach, Plum, Cherry, etc. The writer has been of the opinion for a long time that proper exertions will yet be crowned with success, and he is therefore now acting and will continue to act on the strength of this belief; and we know that there are hundreds of others scattered all over the State who think likewise. The last spring we planted Peach pits, and they have a fine growth. We also grafted the Peach into the wild Plum, and set out others from the nursery. We also set out Pear-trees, dwarf and standard, standard and dwarf Cherry-trees, with a considerable quantity of small fruits known to be tender here, and all have grown luxuriantly. It is, however, fall now, and what we wish to learn by this communication is, (and I trust you have a thousand readers as much interested as I am,) *how may these young trees be preserved through the coming probably "Iowa" winter?* And here it may not be amiss to state what we *have* heretofore done in the way of winter protection. Four years ago (upon the recommendation of the "farmers' club" and others to the effect that they "were hardy") we paid fifty cents apiece for a dozen roots of the celebrated New Rochelle Blackberry. They grew well every summer, and died to the ground each winter. Last fall we set out for winter protection for them. We made frames around them, bent down the canes, covered them with brush, and the brush with straw. When spring came, and the said

covering came to be removed, judge of my surprise when it was discovered that, as before, they were dead to the ground. This experiment with the New Rochelle Blackberry ends for the present, after four years' trial, with the raising of eight berries, and all of which the birds (Henry Ward Beecher's) got before they were fully ripe. Now for the Peach-trees. After winding their stems with cloth, we made and placed frames around the cultivated sorts, leaving the seedlings to stand the winter or not. These frames were then filled with straw, and thus they remained through the winter. Upon removing their covering late in the spring, it was found that the limbs were killed to near the body of the tree ; and again, that the seedlings had fared no worse than their neighbors. And all this happened while the thermometer did not reach to exceed twenty-two degrees below zero. Of course we did not commence spring operations in very good heart, having an eye to the future, but nevertheless we set out more trees the last spring than ever before ; and, die or live, it has done me some good to see them grow during the summer. But more than this : we are still ready to make more experiments, in fact, do almost anything to save these young trees from the perils of the coming winter. Any hints or any suggestions, therefore, that you may give on the subject of raising fruits in this climate and at this time, having particular reference to *winter protection*, will be gladly received and acted upon. Will you not "come over into Macedonia and help us ?"

[We shall very cheerfully do so ; it is for such we labor. We could help you more efficiently, however, if you had told us somewhat precisely the nature of your soil, the prevalent direction of your winds, in what way and how far you are protected, and other matters of like kind. Your soil may be, like that of some of the western States, light, very rich, and deep, but without body, and the roots of the trees being unable to find any secure hold, they are swayed by the wind, the roots loosened and drawn out, and the trees thus perish. It may also be that you have no sufficient protection, by belts of timber, from the cold and heavy winds of winter. The trees in your rich, virgin soil make a rampant growth of wood deficient in density, which ripens imperfectly in the fall, and is consequently winter-killed. Let us know more precisely the conditions under which your trees are growing, and we will give you the best advice we can. You have undoubtedly made some mistakes in the selection of your fruit. There are some varieties of northern apples which we have no doubt will succeed with you ; and so will some of the pears. Peaches you had better let alone for the present, as well as the New Rochelle Blackberry, and other things of that kind, unless you take the trouble to bend them down and cover them with earth. But when we hear from you again, we will make out a list of fruit which we think will suit you, and give you some advice in regard to modifying your soil. Your determination to plant more, if it be only to see the trees grow, is admirable ; such a spirit deserves and will meet with success. The best advice we can give you at present, is to bend down your peach-trees and bushes to the ground, and cover them with some six inches of earth, and on this throw some brush. Do it when the weather is dry. If your trees had been planted with a view to this, the operation would be comparatively easy. But we think we can put you in a better way for your future planting, if your evil is what we think it is.—Ed.]

PEARS ON QUINCE STOCKS.

BY WILLIAM BACON, RICHMOND, MASS.

A YEAR or two since we gave the readers of the HORTICULTURIST some items of our experience in growing the Pear on the Quince. Since then some "deadly foe" to this system of Pear growing has given your readers his opinion of the fallacy of this method of cultivation, and has referred to Pittsfield, an adjoining town, as *one place* where dwarfs have failed. How many such failures there may have been in that town we do not know, nor are we informed of any particular cause of these failures. Yet if the people of Pittsfield tell us the truth, they have not given up, though vanquished; for several reliable citizens have informed us, within the last six months, that they had Pears on Quince stock in cultivation, and were sanguine of success.

But let the failures or successes of Pittsfield and all the world beside be what they may, our own success, so far, is a fact that can not be controverted, for our trees have done well the past season, both in growth and productiveness, and they now stand as firmly rooted to the soil as any standards of the same age. This is provable by large numbers who saw and admired them when in fruit, and wondered how so small trees could bear so much, and wished I would send where I got those trees and get them some. Such is the condition of our dwarf pear-trees *now:* the future must develop itself.

Yet we can not recommend the cultivation of all kinds of Pears in this way. There are, consequently, some exceptions. We name, however, a few of the varieties that, so far, do well and promise well with us.

The *Rostiezer.* This tree is a firm grower and abundant bearer. Its habits of growth are peculiar, if left to itself. The branches need to be checked in their spreading propensities.

The little *Seckel* has done well here. It is of slow growth, but stands firm, and this year the trees have given an unusually fine crop. It makes one of the smallest of dwarfs, and may be safely set six feet apart.

Louise Bonne comes early into bearing, grows strong, and bears well and uniformly. Indeed, the fruit usually needs thinning to give it size and prevent exhaustion in the tree.

Beurré Goubault. With us this dwarf has a peculiar way of growing as it likes, and rejects symmetrical proportion altogether. It, however, makes amends by being a constant and liberal bearer.

The *White Doyenné* naturally gives fine proportions, and fair, beautiful fruit. It appears to be perfectly at home on its quince foundation.

Glout Morceau does finely on the Quince. The tree grows just fast enough, makes strong wood, and bears well.

Beurré Clairgeau makes a beautiful dwarf, and its fine large Pears give a rich contrast to the diminutive trees that produce them.

The *Sheldon* is a firm-wooded, thrifty dwarf, and a beautiful Pear.

Beurré d'Aremberg. We would like to have unbelievers see our trees and decide for themselves. It promises well with us so far.

These are some of the varieties of which, if we speak at all and speak the truth, we must speak well up to the present time. Yet, after all, the future may bring a failure. If it does, we will say so.

We do not, however, recommend dwarf pear-culture to everybody, for there are some who are not fit to have trees any way. These are the class

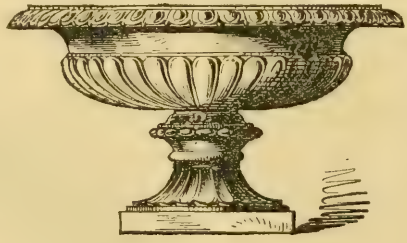
who set them by crowding their roots into holes just large enough, by a little cramping, to thrust the roots in, and then the earth, turf, and all is thrown upon them, and they are left to their fate. It is a pity if trees so set do not die. They become mere cumberers of the ground. If they live, their existence must be a sickly one, and death instead of life and fruit-bearing will be the result. Dwarf trees, like every thing else, must be fairly done by, and they will pay.

We do not know that dwarfs will succeed in all situations on all soils. The presumption is, that they will not flourish equally well in all localities. Nothing strange in that. The native and more hardy trees of the forest all have their favorite localities, and why may not fruit-trees? Ours grow upon a clay loam over a limestone formation quite free from superfluous moisture, and the soil made deep.

We believe that dwarf pear culture will be more generally adopted when it is better understood, and to those who wish to embark in it, we recommend the careful reading of "Field's Pear Culture," a work treating expressly on the culture of the Pear, and written evidently by a man of common sense, and extensive experience and observation. It is a great luxury, in this day of book-making and book humbuggery, to get hold of so practical, common-sense, and truthful a work in so condensed a form. Mr. Field gives beautiful illustrations of over half a hundred varieties of Pears, and describes many others, with their good and bad qualities, besides telling how to raise them.

Since writing the above, I have taken up a six-year-old Napoleon that had unfortunately become too shaded by the growth of an apple-tree. I found the Quince on which it stood entirely dead, but a noble lot of roots had put forth from the Pear at the junction of the Quince. We reset the tree in a suitable locality, and feel confident of its future success. Inference. In setting dwarfs the ground should be made deep, and the Quince and from two to four inches of the Pear covered. Then the Pear will provide itself roots if the Quince fails, and make good trees.

[All very good, except the last, and that would not be so objectionable if the trees were worked low enough. The only sound general rule is to plant with the roots near the surface, and to buy no trees that can not be so planted.—Ed.



EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, &c., intended for the perusal of the Editor, and packages by Express, should be directed to the care of C. M. Saxton, 25 Park Row, New York. Exchanges should be addressed to "The Horticulturist."

New Subscribers.—The time has nearly arrived when we look for a large accession to our subscription list. New names are already coming in, and if our old friends would interest themselves a little, the number would swell rapidly. Now is the time to show your sincerity. Our publisher is preparing a premium list which will add a stimulus to your exertions. Do not wait for that, however, but go ahead.

Something that Happened at Orange.—Something happened at Orange, and we went to see it. It happened at our publisher's. There were lots of people there, and bouquets, and girls, and flowers, and every thing looked cheerful and pleasant. By and by the company all went into the big parlor, and we went in too. Then our publisher's daughter came in, all dressed in white, and looking as pretty as an angel; and a tall young man stood by her side. Then a grave-looking man stood in front of them, and said something to them, and they looked very solemn; but presently he stopped, and then they looked glad, and all the people looked glad, and went up and kissed them, and we did the same, and rather liked it, and kind a got agoing that way, and had a good time of it. But such things can't last for ever! so we said good-bye to Carrie and the tall young man; and the last we heard of them, they were eating chinquapins down in Mississippi. And that's what happened at Orange.

Haslam's Auricles.—We have just received one of these helps to the deaf, aad shall give it a speedy trial.

Messrs. Thorburns' Bulbs.—On examining in detail the bulbs spoken of last month, we find among them some very rare ones, and some quite new, and among others the following: Lilium candidum striatum, L. fulgens incomparabile, L. Thunbergianum, grandiflorum Sieboldii, L. colchicum, (Szovitzianum monodelphicum,) L. puniceum, recently introduced by Siebold and De Vriese, and said to be magnificent; Tulipa clusiana, T. cornuta, (Chinese.) T. Gesneriana, (very large;) Iris Japonica, (new, and said to be very beautiful,) I. Kæmpferi, (a novelty from Japan, said to be splendid;) Golden-striped Lily of the Valley, (Majalis:) Brunsvigia multiflora, B. pumila, (rare,) B. Josephina, (our bulb weighs *six pounds*, and is much the finest we have ever seen:) Nerine curvifolia, (the finest of them all,) N. Fothergillii; Ixia viridiflora, (the prettiest of this class;) a number of new hyacinths, tulips, &c., all of them remarkably fine bulbs; and for which we return our thanks. Bulbs are indispensable for winter blooming; and everybody should have them, and plenty of them.

New Grapes.—We have received during the past month or so a number of New Grapes, which we group here together for a few remarks. For some time yet the cry will be, "Still they come;" and we might as well say at once, of not a few of them, "Let them go." We rejoice at the spirit that is abroad on this subject, because we believe that it will be productive of good results; but it is time that we began to judge all new comers with some degree of severity, and let none pass that can not show a high character.

Creveling.—We first saw this grape in Philadelphia at the Pomological Society, and subsequently received a box of it from Mr. Goodwin, of Kingston, Pa., from a bunch of which our engraving was made. This grape resembles somewhat the Isabella, but is still quite distinct from it. The bunch is rather narrower, the coloring matter of the skin is of a deep purple, the berries are covered with a thick bloom, and it ripens much earlier. It is a sweet and pleasant grape, and of value for its early maturity.

Bloom.—About a week subsequently we received the Bloom Grape from Mr. Merceron. Being struck with its resemblance to the Creveling, we compared the two, and could perceive no difference between them. We have no doubt that they are one and the same.

Cuyahoga.—This we received from Dr. Grant; but it was not ripe. As we expect to have it mature, we say no more about it for the present.

Bullitt.—For this we are indebted to Mr. Quinby. It is a green grape, the bunch and berry both small. It was unripe, and without flavor.

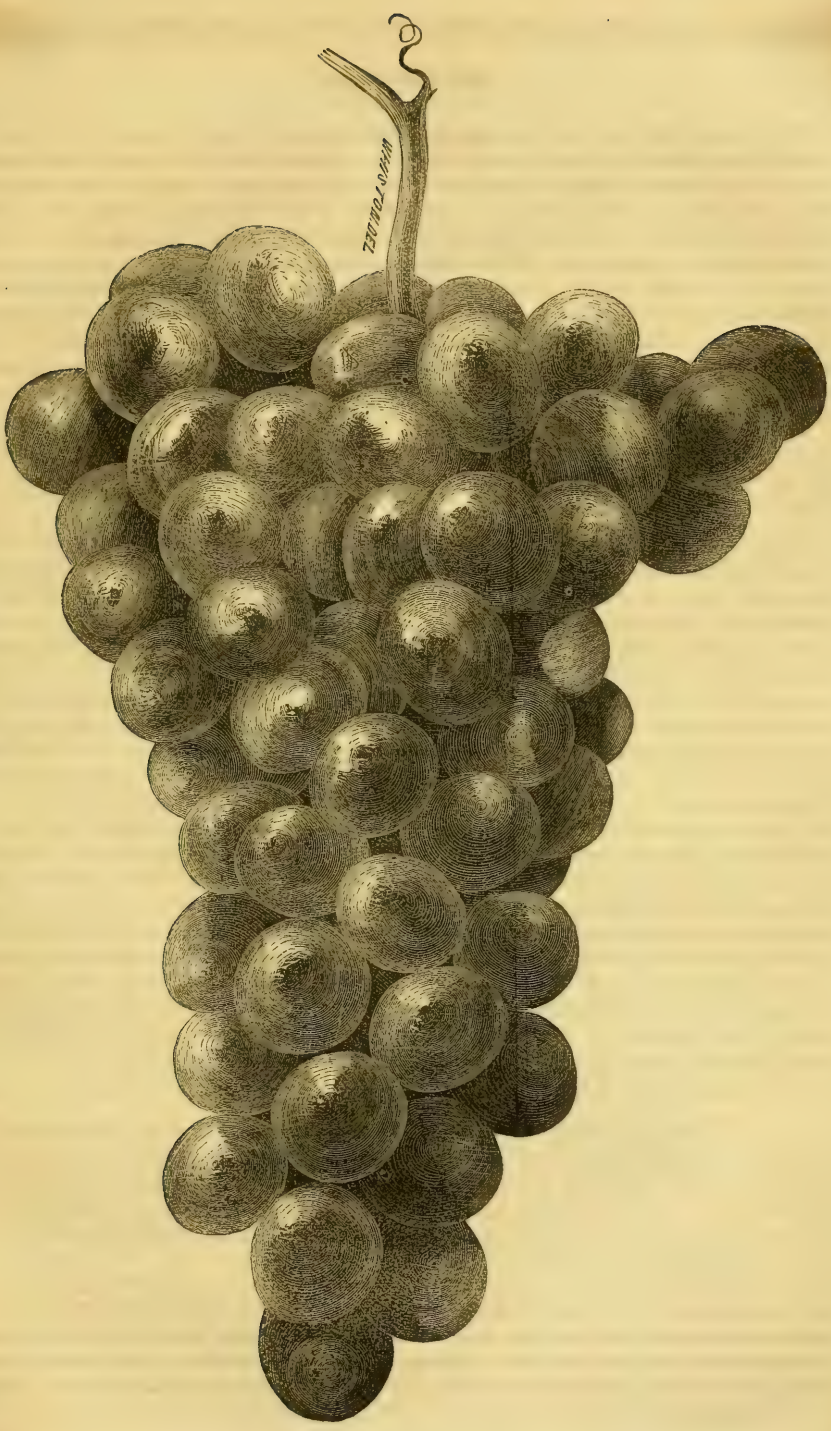
Montgomery.—From Mr. Merritt, of Hart's Village. Bunch large and handsome; berry round and below medium size; color green. Unripe, and quite acid. It is evidently a Chasselas seedling, and we should think not hardy about here.

Merritt's Seedling.—Also from Mr. Merritt. Bunch smaller than the preceding; berry below medium; color greenish amber. Riper than the Montgomery, and we should think a better grape. This is also a Chasselas seedling.

Maxatawny.—Not quite ripe, but it has flavor, and we put it down as a promising grape.

We have also received a number of grapes without name, and some of them quite immature.—From Dr. Weeks two varieties, quite unripe. One we take to be the Herbemont. From Mr. Sampson a small black grape for a name. We are sorry to say that at present it is not worth one, and gives no promise of ever being so. Bear in mind, Mr. Sampson, that it is no fault of ours that we are compelled to say so; it is really the fault of the grape.—From Mr. Paxton a grape for a name, if we think it worthy of one. We do so think it, and shall name it soon. It has the merit, too, of being quite distinct, though we could wish the color were a little brighter. The bunch is large and well shouldered; berry round, of medium size; color dull red, inclining to green; pulp melting, partaking of the sweetness of the Diana and the flavor of the Catawba. It is a very promising grape.—Mr. Fuller brought us a grape received from Mr. Sacksteder, of Louisville, Ky. The bunch and berry are both small; color deep black. It is a very rich, saccharine grape, of which we should like to see and hear more. We have never seen it before, and do not know its name.—From Miss Chamberlin a box of grapes, the bunch and berry small; color black; sweet, juicy, and well flavored; ripens about the first of September. We have never seen it before, but think it is a seedling of the Frost Grape, and a great stride in the right direction.—From Mr. Wells, a basket of White Grapes, said to have been found in the woods by some boys. Bunch and berry medium; color green; juicy and saccharine.

A new Spiræa.—Mr. Negley a few days since sent Mr. Saxton a seedling Spiræa, which we saw by the merest accident, and it is too good not to be noticed. It is a hybrid from Douglassii, and, we should think, Callosa. The flower is mostly in the style of Douglassii, but of a more delicate texture. It is now (Oct. 18th) in bloom, some of the buds being still unexpanded. The leaves are dark green, and finely serrated, having somewhat the appearance of a Berberry. It is very pretty, and blooming late as it does, will be a valuable addition to our list of shrubs.



CREVELING GRAPE.

FRUIT RECEIVED.—For the following, not elsewhere acknowledged, we desire to return our best thanks. From Dr. Grant, a basket of Pears, containing Seckel, Flemish Beauty, Beurré Diel, Louise Bonne de Jersey, Beurré Bosc, Brown Beurré, Beurré d'Anjou, White Doyenné, Glout Morceau, &c.; also Delaware Grapes.—From Messrs. Ellwanger & Barry, Rochester, large and handsome specimens of Beurré Diel, Buffum, Urbaniste, Napoleon, Winter Nelis, Beurré Superfin, Beurré Gris d'Hiver Nouveau, Beurré d'Anjou, Louise Bonne de Jersey, Brown Beurré, White Doyenné, Oswego Beurré, Rapelye's Seedling, Beurré Bosc, Duchesse, and Sheldon.—From Mr. Chorlton, exceedingly large and beautiful specimens of Beurré Diel and Beurrê Bosc.—From Mr. W. L. Ferris, a basket of fine Lawrence Pears.—From Mr. Howard, of Buffalo, large and handsome bunches of Catawba, Isabella, and Concord Grapes.—From E. D. Barker, well-ripened Isabellas.

HORTICULTURAL EXHIBITIONS.—We have in type, reports of the Hartford Co. Society, Kentucky Horticultural Society, Yonkers Horticultural Society, American Institute, &c., which we are compelled to lay over a month for want of room. We have done the very best we could.

THOSE CHERRIES.—F. R. Elliott, Esq., in a private letter, gives us the following rap about our July plate: "Don't, oh! pray don't give any more cherry engravings; or if you do, take even the cuts in Cox as models, rather than trust to the one who 'did' that of July." Truthfully, but kindly said. No, Mr. Elliott, we will give no more such plates while we retain the chair editorial. It is no sufficient excuse to say that the plate was not prepared under our supervision; but you and all our readers must have seen, from our apologetic remarks, that we were heartily ashamed of it. The simple truth is, that we did not know how bad the plate was until it was too late to get ready another. We are always ready to acknowledge a just criticism. We should be much pleased to have your notes; make them as much better as possible than those you allude to. Your description of the apple answers to Sops of Wine, which we occasionally see, and of which Washington is a synonym. Speaking of grapes, Mr. Elliott remarks:

"I had an opportunity of examining the Cuyahoga Grape, a few days since. It is nearly as large as Catawba; compact bunches; color of Rebecca; and a delicious, sprightly, aromatic grape, far better than Rebecca or Diana, but not equal to Delaware. Its size, color, and quality, however, place it, without question, as among the best of hardy grapes. As an amateur grape, it is indispensable. I have also examined 'Logan.' In size and quality, it is almost a fac-simile of Isabella; the bunches are not so compact; and it ripens, fit for market, before Isabella becomes at all colored. During the past few days I have met with a grape, brought from Massachusetts thirty years since, that has all the character and appearance of Diana. Is it possible that Mrs. Crehore did not grow that grape from seed? I shall visit the vine from which I saw fruit, and learn more of it."

Do so, and please let us know the result.

PRINCE'S HYBRID DWARF CHESTNUT.—Mr. Prince has sent us some chestnuts of very good size and quality, of which he gives the following account: "Trees ten feet high, bushy from the ground. They are seedlings from the hybrid Chinquapin, obtained by my father, by hybridizing the French Chestnut and the American Chinquapin. These trees began to bear at five feet, and are now covered with an abundant crop. The fruit averages larger than the American Chestnut, and is excellent.

THUJA AUREA.—We have just received a large and splendid specimen of this most beautiful of all the Arbor Vitæ, and also plants of the Wizard of the North, Admiral, Malakoff, and La Constance strawberries. The Arbor Vitæ was put carefully in a barrel, with hoops arched over the top to protect it, and came to hand in admirable order. It was certainly a *bright* idea, and we are delighted.

EDITOR OF THE HORTICULTURIST: — For the improvement of our horticultural societies, many of which are now holding their exhibitions, I would like to make a suggestion in regard to their *premiums*, viz:

Have *photographs* of the plants, flowers, and designs taken and colored. Give the exhibiter one copy; the society keep one, and sell as many as might be called for, and also to exchange with other societies.

For fruit, have the same, when copies in wax or plaster can not be procured. These would soon form a valuable cabinet; and the sale of the extra copies would soon pay for all.

These copies would be more highly prized by the exhibiter than money or a medal; as they would represent what he exhibited, which the money, or any thing else, does not.

The exchange of copies by different societies would increase the competition, and enable each society to see what progress they make from year to year.

Yours, &c., IMPROVEMENT.

[A very good idea: who will make a beginning?—ED.]

AN EXPLANATION.—We expressed some surprise last month that the Judges on Fruit, at the Brooklyn Exhibition, should have awarded the first prize to native grapes *grown under glass* in competition with those grown in the open air. Mr. Thomas Hogg, the chairman of that committee, has called upon us, and denied very pointedly that the committee did any thing of the kind; that, on the contrary, being convinced that these grapes were grown under glass, they passed them by, and gave them no prize at all. This is satisfactory, so far as the committee are concerned, and relieves those gentlemen from a grave responsibility. But the question arises, How, then, did these grapes get this award? Has the report of the committee been tampered with? We desire, for the sake of the reputation of the Brooklyn Horticultural Society, to have this matter cleared up; and we hope it can be done without implicating any body.

GAS FOR THE MILLION.—Heretofore the use of gas has been mainly confined to cities and the country residences of the wealthy. We have now an apparatus which will furnish a good light at a less cost than common oil. The light is pure and brilliant, and free from offensive smell. The apparatus is safe, simple, cheap, and the only cleanly one we have ever seen. We have studied it with much interest, and commend it especially to our friends in the country. M. P. Coons is the patentee; but it may be had of Butler, Hosford, & Co., 30 Broadway.

HARTFORD PROLIFIC GRAPE.—Much has been said of the dropping of the berries of this grape; but we have had specimens this season, from different parties, on which the fruit hung as well as on most other kinds. Mr. Fuller sent us a basket of the Prolific, which we found to be about equal to the Isabella in its best estate, and which has advanced our opinion of it somewhat.

SOME SIGHTS AT PHILADELPHIA.—While in Philadelphia attending the session of the Pomological Society, we received many courtesies from friends there, which call for our thanks; but to Mr. King we are especially under obligations for personal attentions, which we shall not soon forget. It was chiefly through his politeness that we were enabled to visit some very interesting places during our brief stay.

Having added Rev. Dr. Ide, Dr. Grant, and Mr. Campbell to our party, our first call was at the princely residence of James Dundas, Esq. We could only cast a hasty glance at the houses and the grounds, the latter admirably kept. It was a very gratifying sight to see such large grounds, and so many rare and costly plants, in the heart of the city. The great feature among the plants was the grand Victoria regia, leaves of which have since been exhibited at Brooklyn and New York. We found a young plant in a basin in the open air, which seemed to be growing finely, with a flower bud nearly expanded; but the large plant in the Victoria house was a sight of itself worth a journey to Philadelphia to see. In the same tank was a specimen of the rare and

remarkable Lace Plant, which grows entirely under water. The tank is arranged very much like that of Mr. Cope's at Taconey, which we saw several years ago. Our stay at Mr. Dundas's was necessarily very brief, but we could not help being struck with the many large and fine plants in his collection, and went away regretting that there should not be room enough for all, and that they were consequently so much crowded.

From Mr. Dundas's we went to Mr. Fahnestock's, a small but tidily kept place, with a very polite gardener. We found every thing in good order. The chief attraction is the Orchid house; it is a model of its kind, well stocked with choice and rare plants, all in the best condition. We do not remember to have seen any where so fine a collection of the exquisitely beautiful Anœctochilus. We left, regretting that we had only time for a glance at this fine collection of Orchids.

A ride through some of the principal streets, embracing a sight of several fine churches and public buildings, brought us to the water works, one of the most interesting objects in Philadelphia, but not strictly a horticultural subject, so we will take to our carriage again, and pass on to Girard College, another subject not strictly horticultural; but we may be permitted to say that Girard College is the grandest specimen of Grecian architecture that we have ever seen. The building is immense, but so exquisitely proportioned that we get no proper conception of its size until we stand beside one of the colossal columns that surround it. Nothing noteworthy occurred here, except that the D.D. of our party was excluded by the rules of the college, while the M.D. entered without let or hinderance. Not being disposed to find fault with so munificent a benefaction, we can only say that the rule struck us as being very singular.

Leaving the college, we proceeded to the old Bartram garden, which we had a great desire to see. We were disappointed, however, in finding a spirit of neglect pervading the whole place; but the grand old trees, the greenhouses in ruins, and the old ivy-mantled homestead with its quaint inscriptions, were full of a peculiar interest, and very impressive. We should have liked to linger for a while amid these mementoes of the past, but the day was far spent, and with only a brief look we left silently, each one absorbed in his own thoughts.

We returned to Philadelphia, having done a good day's work in the way of sight-seeing, and found Mr. King an excellent Mentor through it all, our only regret being that our visit at each point of interest was necessarily brief.

But we were not yet done. Having accepted some invitations at Germantown, and being desirous of examining Mr. Bright's system of planting and pruning, we increased our party the next morning, and took the early train. We were met at the dépôt by Dr. Houghton and Mr. Bright, and conveyed first to Dr. Houghton's new place. Some of us, no doubt, went prepared to criticize all we saw, and others in a state of bewildering uncertainty, having heard so many contradictory reports of what we should see. We first went through the grapery. This is one year old, and built on Mr. Bright's "inside border" principle, which he has heretofore fully described in these pages. As some misapprehension exists in regard to the concrete bottom, we will add here that the bottom of the border is elevated several inches above the bottom of the house, so that it is impossible for stagnant water to accumulate in it. The vines are young, but have made a fine growth of round, stout, shorted-jointed wood, and are all that could be desired. The vines in pots were in the same excellent condition, and gave us much satisfaction. On the whole, every thing seemed to be working here as well as Mr. Bright could desire; we should have no doubt of his success, with some modification of his ventilation, and some further precaution for moisture in his borders as his vines advance in age, all of which he will no doubt look after sharply.

We next examined the new vineyard. The vines are planted two feet apart, on the "single stem renewal system." They are one year old, have made a fine growth, and are in the best condition. Mr. Bright's system has provoked a good deal of discussion, which is all right and proper enough when confined to the merits of the system itself, which has not always been the

case. In the meantime, we bespeak for it a fair trial. Let Mr. B. go on with his experiment, as we judge he will in spite of all opposition; the horticultural community will be benefited whether he succeeds or fails. We would suggest to him, however, that his chief difficulties will begin when the vines have attained the age of some five or six years, when some additional "safety valves" will be needed, which he may find the means of supplying; and by that time he will have demonstrated how far, if at all, old wood is necessary to the highest condition of fruit; a very interesting and important point of great practical value. His system is so simple that we wish he may find all his anticipations realized. We shall watch his progress with much interest.

We next examined the young pear orchard, chiefly in reference to the manner in which the trees are planted. From what we had heard, we expected to find this orchard a multitude of hillocks; but we were disappointed. On removing the charcoal mulch (which, by the way, is a good one) the ground was found to be level, offering no impediment to the cultivator. The roots were some two to four inches from the surface, just where they ought to be. These trees were well planted, and none of the party, so far as we know, found fault with them in this respect, though some comments were made on the want of pruning, the benefits of which Mr. B., we believe, proposes to effect in his own way. The standard trees are alternated with dwarfs, and all are growing finely. The orchard is of considerable size, and will no doubt in time prove profitable.

After partaking of the doctor's hospitality and discussing some native vines, the party proceeded to Mr. Bright's nursery, where we found more graperies with inside borders, the vines being in very fine condition, and ripening off nicely. The vines in pots were also very fine. The party next walked over the grounds, and we were greatly pleased with its neatness, and the fine appearance of every thing it contained; it is a model in its way. The beautiful specimens of Firs, Junipers, and the lovely Golden Arbor Vitæ, were especially noteworthy. The trees and shrubs are not huddled together, as is too frequently the case, and they consequently rapidly attain size and form, give more satisfaction, and sell at a higher price.

Leaving Mr. Bright's, we made a brief call at the stately residence of Mr. Lovering, mainly to see his orchard house, an account of which we have already published by our correspondent, Dr. Norris. This orchard house is of large size, and has been built at some expense, and the owner has, no doubt, aimed to erect the best possible house for this purpose, and to conduct all the operations pertaining to it in such a way as to insure the best success. We admire the spirit and enthusiasm which lead a man into an enterprise of this kind, and therefore regret that we can not altogether approve of the arrangement of this house, and still more to be compelled to say, that in the management of his trees he has made a sad mistake from the beginning. We do not know whether Mr. Lovering is satisfied with the results thus far, but we know that he ought not to be. He has too many trees in the house by more than half, and they are not grown as they should be. We would on no account say a word of discouragement, and we hope he will begin again *de novo*.

Spending a few moments in walking over Mr. Lovering's beautiful grounds, we left with the intention of going to Mr. Smith's and Mr. Harrison's; but our time had fully expired, and so, thanking Dr. Houghton and Mr. Bright for their courtesy and attentions, we took the cars and returned to Philadelphia, well pleased with all we had seen.

We can not close without alluding to the reception given by Mr. James, on Wednesday evening, where we met most of the members of the society, and some of the leading citizens of Philadelphia. It was a time of much enjoyment, and passed off very happily.

PRESIDENT WILDER'S ADDRESS.—We give below the address of President Wilder, at the Eighth Session of the American Pomological Society, held at Philadelphia, Sept. 11–13, 1860. It is a valuable document, and will be read with much interest:

Gentlemen of the Society, and Friends of American Pomology:—By our Constitution, my

official position requires me, at the opening of this session, to address you on the art or science of pomology, on the interests, progress, and present condition of our association.

In the performance of this duty, I am happy to meet you in this city of brotherly love, the birthplace of that Declaration which gave us an indedendent national existence; of that Constitution also, which embodies the wisdom of our venerable fathers, and is the charter by which we hold the inheritance we seek to improve, enjoy, and transmit. Here, too, by a former inhabitant of Philadelphia,* a few years later, was first exhibited the application to vessels of that invisible agent, which now propels thousands of steamers through our navigable waters, which has wrought such wonders in all the useful arts of life, and is progressing upon a stupendous scale of development. Here was organized the first society for the promotion of American Agriculture. Here, also, originated the first association for the advancement of American Horticulture, having for one of its leading objects, the introduction and cultivation of new and choice varieties of fruit

Deceased Officers.—Andrew H. Ernst, of Cincinnati, Ohio, one of the Vice-Presidents of this society, died at his residence in that city, February 13th, 1860, aged sixty-four years. He was a gentleman of foreign birth, but thoroughly nationalized; being a great admirer of American character, and a firm supporter of American institutions. He was a pioneer and champion of our cause in the north-west section of our country; a gentleman favorably known and highly appreciated by all who knew him for his pomological knowledge, for his characteristic modesty, for suavity of manner, and for his eminent Christian virtues.

We have also to mourn the death of Benjamin V. French, of Dorchester, Massachusetts, a member of the Executive Committee, who died April 10th, 1860, aged sixty-eight years. Mr. French was ardently devoted to the cause of terra-culture, in its most comprehensive sense, and has, for many years, held important official positions in the Agricultural and Horticultural Societies of his State and country. Few men have been more interested in the cultivation of the soil, and few have been so strongly attached to rural life and rural happiness. Even to the close of life, these were his most cherished objects.

In reflecting on the usefulness and example of our departed friends, on their labors and contributions to the cause of pomology, their honorable life and peaceful death, we shall ever retain a high appreciation of their worth. We cheerfully accord to their memory our gratitude for their valuable services, and enrol their names among the benefactors of mankind. We mourn the loss of these worthy associates, but our institution still lives, and other friends survive to co-operate with us in advancing the cause so dear to our hearts.

Eighth Session.—This is the eighth session and twelfth year of our association. Much has been accomplished since its organization, but how wonderful the improvement in every branch of husbandry, and in all that concerns the progress of society since the formation, in this city, of the first association for the promotion of rural art, just three quarters of a century ago! It is profitable to look back occasionally, and see what has been achieved in the past.

Most sincerely do I congratulate you upon the general interest now awakened in fruit culture; on the zeal, enterprise, and industry of cultivators in the acquisition and production of new and choice varieties; on the multiplication of local associations and publications, all laboring with us for the promotion of pomology.

In this presence, and on this occasion, I have no speculations or doubtful theories to promulgate. We have had already enough, and perhaps too many of these for our own benefit or others. What we especially need are the results of the ripe and united experience of the best cultivators, guided by the deductions of science. Some of the recommendations in former addresses I desire to reënforce, for it is "line upon line, and precept upon precept" that makes a deep and lasting impression. New topics, as they arise, are entitled to respectful consideration, and the discussion of them will undoubtedly elicit important information.

Revision of Catalogue.—It has been our custom on former occasions to enlarge and revise our

* John Fitch, in 1788. To his steamboat Perseverance.

General Catalogue by a discussion and vote on each variety. Great advantages have already resulted to the country and the world from the catalogue of this Society, which classifies our fruits; registers those suited to general cultivation; those adapted to particular localities; those which promise well; and those that are pronounced unworthy of cultivation.

It will be remembered that, at the last biennial session, the Chairman of the General Fruit Committee recommended the appointment of local committees in each State and Territory, charged with the duty of producing and submitting to a special committee a list of the fruits cultivated in their respective localities.

From these local catalogues, embodying the ripest experience of the best cultivators in all parts of the country, it will be easy for the society, at its next session, to transfer fruits to the corresponding department of the Society's General Catalogue.

I therefore respectfully recommend,

First, That no revision of that portion of our catalogue embracing fruits for general cultivation be attempted at this meeting.

Secondly, That local committees be appointed, each of which shall be charged with the duty of preparing a catalogue of the fruits in its own locality, on the same general plan as the Society's Catalogue.

Thirdly, That a special committee be appointed at this time, to whom these various local committees shall make their report during the year 1861.

Fourthly, That the Special Committee be charged with the duty of compiling, from these local catalogues, and from the present catalogue of our Society, full lists of all the fruits therein named, properly classified and arranged, with due regard to nomenclature and terminology, and shall submit the same at the next biennial session for its consideratian and action. This labor, well performed, will redound to the honor of American Pomology.

These recommendations are not intended to preclude a discussion of the merits or demerits of any variety now on our catalogue. On the contrary, they call for a full and free expression of opinions in respect to any department of the same, as this may aid the labors of the several committees. Neither are they intended to preclude the addition of varieties to the list which *promise well*.

If this association had rendered no other service except to give to the world its present catalogue of fruits, it would have fulfilled an important mission: but it has done more; it has encouraged and originated many kindred associations, has brought together experienced cultivators, and made them teachers of each other.

By this action and reaction of mind on mind, many of the first principles of judicious cultivation are now fully settled and well understood. Among these are the following, to which I will now only briefly allude, as they have been more fully considered in former addresses:

1. *Culture of Trees.*—The healthful development of fruit-trees, as of other living substances, depends on the regular reception of a certain quantity of appropriate food. This food, whether derived from the earth, air, water, or other natural elements, is conveyed through the medium of the atmosphere and the soil. While we have only an indirect and imperfect control of the atmosphere and other meteorological agents, the Great Arbiter of Nature has committed the *soil* directly to our care and treatment.

2. To this I may add the general sentiment in favor of thorough and perfect drainage, beneficial to all cultivators, but indispensable to the fruit-grower.

3. Not less uniform is the experience of the salutary effects of a proper preparation of the soil for fruit-trees, both in the nursery and in the orchard.

These principles are settled in the minds of all intelligent fruit-growers; but they need to be often promulgated and enforced. It should be equally well understood that success depends upon the adaptation of the habits of the tree to the constituents of the soil, the location, and aspect or exposure. A disregard of this principle, and the fickleness of seasons, are among the most

common causes of failure, not only among inexperienced cultivators, but among professed pomologists.

More attention should be given not only to the location, but especially the aspect of trees. A common error is to disregard the time of ripening. We plant our early fruits in the warmest and most genial locations. These should be assigned to our latest varieties. For instance, we, at the north, have too often placed our late fall and winter pears, like Easter Beurré, or Beurré d'Aremberg, in northern aspects and exposed positions, where they are liable to injury by the gales and frosts of autumn, whereas we should have given them a southern aspect, and our most fertile soils, to bring them to perfection. The most favorable locations are not so indispensable to our summer fruits, which mature early under the more direct rays of the sun, and in a much higher temperature. This rule may require modification and even reversion to adapt it to the south or south-west portion of our country. And here I can not refrain from expressing the earnest hope that our local catalogues may be framed with a wise reference to this principle, and that the day may not be distant when the Society's Catalogue shall designate the particular locality, aspect, and soil, adapted to each variety of fruit.

But however important these considerations may be, the subsequent cultivation of trees must receive a passing notice, even at the risk of repeating some opinions of myself and others, which are already before the public.

The sentiments contained in the communication of Mr. J. J. Thomas, at our last session, against the growth of any other crop in orchards, especially against relying upon small circles dug around trees in grass ground, as a method of culture, deserves to be held in perpetual remembrance. Equally injurious, in my own opinion, is the habit of deep digging or plowing among fruit-trees, thereby cutting off the roots, and destroying the fibrous feeders, which frequently extend beyond the sweep of the branches. However necessary the practice may be of cutting off roots in old orchards, in the process of renovation, it should be carefully avoided in grounds properly prepared, and where the trees are in a healthy or bearing condition. From experiment and observation, I am persuaded that working the soil among fruit-trees, to the depth of more than three or four inches, should be carefully avoided. The surface should only be worked with a hoe, or scarifier, for the purpose of stirring the soil, and keeping out the weeds. Thus we avail ourselves of the advantages of what, in farming, is called flat-culture, at present so popular. For the same reason, manure should not be dug in to any considerable depth, and some of our wisest cultivators now recommend its application on the surface. So favorably impressed with this practice is the Massachusetts Board of Agriculture, that it has ordered a series of experiments with cereal grains and other products in the application of manures on the surface as compared with specified depths beneath it.

The practice of surface manuring is no novelty of our day. An eminent cultivator of fruits, nearly two hundred years ago, said, "Manures should be applied to fruit-trees in the autumn upon the surface, that the rains, snow, and frosts may convey the elements of fertility to the roots;" and "that, by this method, one load will do more good than two used in the common way of trenching in to the depth of one foot." Other distinguished cultivators and scientific gentlemen recommend the same practice. Hence we are of opinion that our orchards and gardens should be manured in the autumn, and on the surface, so that the manures may be thoroughly decomposed, made soluble during the fall and winter, and suitable for the nourishment of the tree early in the spring.

In the history of this art, as of most others, it is wonderful how human opinions change. What were once considered as fundamental, are now rejected as unphilosophical or injurious, and those once rejected are now adopted as wise maxims. The doctrine has prevailed, from the time of Columella and Varro, that manures should not be exposed to the air, but should be incorporated with the soil as soon as laid out; whereas, we have now the opinion of cultivators and chemists in favor of exposure to the air, and other external agents of decomposition, and

that it is not a source of nutrition to the plant until it is thoroughly decomposed. This opinion is certainly corroborated by the practice of skilful gardeners in all past time, who will never use green manure in the potting or cultivation of plants, and only that which has become old and fine.

New Native Fruits.—Changes of opinion have also taken place in regard to the acquisition of new sorts of fruits. Formerly we looked to other countries; now we rely, more especially, on our own seedlings for the best results. When we reflect upon the great number of new varieties which have, in our time, been raised from seed, and the progress which has thereby been made, no apology need be offered for repeating what has been said in former addresses, in commendation of this branch of pomology. It was my first, so it shall be my continual and last advice: "Plant the most mature and perfect seed of the most hardy, vigorous, and valuable varieties, and, as a shorter process, ensuring more certain and happy results, cross and hybridize your best fruits."

What wonders this art has already accomplished in the production of new and improved varieties in the vegetable kingdom! How much it has done for the potato, the turnip, and other vegetables, producing, from a parent stock of inferior grade, numberless varieties of great excellence! How it has brought forth from the hard, acrid, and foxy grape of the woods, the delicious varieties that are now obtaining notoriety and extension; from the bitter almond, the luscious peach and nectarine; from the austere button pear of the forest, the splendid varieties that command our admiration; from the sour crab, the magnificent apples which now constitute the dessert of our tables; from the wild raspberry and blackberry of the hedge, from the native strawberries of the pasture, those superb varieties which crown the table at our exhibitions. We believe it is now admitted, that our native varieties are more hardy, vigorous, productive, and free from disease than most foreign sorts. Thus, we have seedling gooseberries free from mildew, and pears that never crack. Why can we not breed out the black wart from the plum? It has been suggested, by a gentleman of great knowledge, that, by taking the common wild plum, the *Prunus Americana*, of which there are several varieties, varying in color, size, and flavor, we may produce kinds not subject to disease, if judiciously crossed with our best garden sorts; or, if bred between themselves, we might, perhaps, add new varieties to our species of cultivated plums, which would be healthy, productive, and delicious. This suggestion is certainly worthy of consideration and experiment.

Let not this recommendation, however, in regard to cross-fertilization, discourage the sowing of other seeds, because they have not been artificially impregnated by the hand of man, for they may have been fertilized by the wind, or insects conveying the pollen of one variety to the style of another. In this way have been produced most of the superior sorts of American fruits. How extensive and inviting is the field here opened even to the most common fruit-grower, who, practising upon this principle through a series of years, can hardly fail to produce some good fruits, although he may not be acquainted with the higher and more delicate process of artificial impregnation. But infinitely superior and more promising is the sphere of enterprise which opens before the scientific pomologist. It is broad as the earth, free as the air, rich as the land of promise. In his hands are placed the means of continual progress without the numerous uncertainties which must ever attend accidental fertilization. He has the sure guide of science, which never misleads her votaries, but elevates them from one degree of excellence to another towards absolute perfection. By these processes, new varieties are multiplying with unparalleled rapidity throughout our country. We rejoice in the intense zeal which has been awakened in this pursuit. It augurs well for the future, whether prompted by the desire either of fortune or of fame. But the spirit of adventure, thus awakened, needs occasionally a little wholesome discipline, lest it foster an undue reliance on immature experience, and tend to quackery, imposition, and fraud.

While we refrain from all personal reflections, we can not forbear exhorting all, and especi-

ally the officers and members of this association, to increased vigilance and caution in the recommendation of novelties, until they have been thoroughly tested by competent judges. As it is human to err, so it is natural to be partial to one's own offspring and friends, and this partiality often sways the judgment of honest and good men.

But a more common and serious difficulty under which we labor, is the promulgation of seedlings by individuals and associations that have not the information requisite to form an intelligent, and, therefore, reliable judgment. Another evil which increases with the mania for what is new and rare, is the exposure for sale, by flaming advertisements and speculating agents, of old varieties under new and specious names, varieties which, like Jonah's gourd, were known in their day and place, but have long been consigned to oblivion.

As in the past, so in the present and in the future, let it be our purpose and practice to reject those that are worthless, to withhold our approbation from those that are doubtful, and to encourage the multiplication of those only, which are of decided and acknowledged worth. Thus shall we elevate the standard of judgment, and fulfil the mission providentially assigned us. We might enlarge on this and other topics, but the brief period which it is proper for me to occupy in this opening address, restricts me to one or two other considerations.

Affinities.—I would here again recommend a more careful study of affinities between the stock and the graft. Whatever be the opinions in regard to the manner and degree of influence which the scion has upon the stock, or the reverse, the fact of that influence is undeniable. For example, we have seen certain varieties of the pear, as the Cross, Collins, and others, which would not readily assimilate with the stock, however vigorous. We have, in many instances, seen healthful trees sicken and eventually die, by the insertion of these uncongenial grafts. So great was the want of congeniality, that we have seen the stocks throw out successive crops of suckers, and although these were frequently removed, yet the scion would refuse to receive and elaborate the sap in sufficient quantity to nourish it, and the trees would finally die. In such instances, the only way to restore the health of the stock is to remove the graft for a scion of its own or some other appropriate sort.

As I have formerly directed your attention to this topic, I have only space to embody a few general rules to guide practice.

In deciding upon affinity between the tree and graft, consider—

First, The character of the woods to be united, as whether of fine or coarse texture, of slender or gross growth.

Second, The wood-buds, whether abundant or sparse, plump or lean, round or pointed.

Third, The seasons of maturity, whether early, medium, or late.

These suggestions will suffice to indicate the direction of thought and the kind of investigation to be pursued. A better knowledge of the subject will, no doubt, hereafter be attained, and will reveal some of the inexplicable mysteries which now attend this branch of fruit culture.

Grape Culture.—Let me for a moment call your attention to the cultivation of the grape. This is now assuming so much importance in our country, that it seems entitled to special attention at this time. Its progress is indeed marvellous. Until within a few years, it was supposed that Providence had assigned grape-culture and the manufacture of wine to countries in the south of Europe, and that the soil and climate of America were not at all adapted to their production. Still later, the theory was promulgated, which has not as yet yielded in full to a more enlightened judgment, that no good grape could flourish on our eastern slope. Now, it is known to succeed in almost every aspect where soil and cultivation are suitable, and it is believed, that no country on earth is better adapted to the extensive cultivation of the grape than the United States of America. This branch of fruit culture is yet in its incipient state, but it has progressed so far as to authorize the belief that the grape can be grown with success in almost every State and Territory of the Union.

With the progress already made in raising new sorts, it is only a question of time when we shall have varieties adapted to almost every locality. Thousands of cultivators, scattered over our extended country, are each of them raising new varieties from seed in the expectation of success. While some of them may be valuable, many must, of necessity, be failures, having been originated from natural and accidental impregnation, without any settled or philosophical plan. The laws of reproduction, in this department, are the same as in other branches of the vegetable kingdom. For instance, in northern latitudes, the great object should be to produce good kinds which ripen early, and are perfectly hardy. To procure these from the limited number of our native grapes, we must resort to the art of hybridization, taking for the parents those sorts which contain the characteristics we desire to combine. This work has already been commenced in good earnest, and is progressing rapidly in the hands of many practitioners. Illustrations have occurred under our own observation, proving the immediate and happy results from the crossing of native with foreign grapes. A gentleman in my own vicinity has taken, as the mother parent, the *Vitis labrusca*, a common native grape, and crossed these vines with the pollen of the Black Hamburgh and the White Chasselas grapes. Of forty-five seedlings, thirty-seven have borne fruit. All progeny of these have proved perfectly hardy, and have stood without protection for several winters, where the Isabella and Diana have been much injured. Of the seedlings produced from impregnation of the Black Hamburgh, most of them inherit, in a good degree, the color and characteristics of the male parent; while those fertilized with the White Chasselas, all were of a reddish color, intermediate between the natural colors of the parents. Thus we see the positive and powerful effect of the art of hybridization in the hands of scientific cultivators, who can, in a measure, control the process of reproduction, and render it subservient to their purpose.

But, to prevent discouragement and sustain perseverance, it should be remembered that, in conformity with the experience of Van Mons, Knight, and other pioneers, a seedling does not attain to perfection at once. To arrive at its culminating point of excellence, it must often be fruited for several years. Others maintain that a number of manipulations are requisite to bring a new variety to perfection. Some varieties attain this much earlier than others, and the same variety reaches it earlier or later in different localities. Hence, an originator should not reject a seedling of some apparent good qualities, simply because it may have some defect; for this may result from local or external influences. He should, therefore, cause it to be transferred for trial to a different soil and climate. Even grapes of acknowledged excellence are improved by this change. The Concord and Diana, of Massachusetts, valuable as they are at home, acquire a superiority in the south and south-west unknown in their original locality, even rivalling the Catawbas and Isabellas of those sections.

It seems to be a general law of nature, illustrated in our forests and fields, that some trees and grains will flourish in nearly all localities and latitudes, while others are particularly restricted to certain districts. By this arrangement an all-wise Providence diffuses blessings over our country and clime. Each has its appropriate share in the general munificence of the Creator, together with luxuries peculiarly its own. The grape is common and almost universal; but the varieties of this fruit are mutable and local, capable of endless adaptation by human skill. Hence this field for the culture of the grape, upon the borders of which we have scarcely entered, is, to the intelligent cultivator, full of promise and reward.

While it was formerly supposed that the peculiar, and, to many, the disagreeable aroma of our common grapes disqualified them for the production of choice fruits and wines, it has been proved, we think, beyond a reasonable doubt, that the characteristic designated, by way of contempt, as the fox or pole-cat flavor, will hereafter constitute one of the chief excellencies of of our new varieties, when, by the art of hybridization and civilization, this flavor shall have been modified and changed, by alliance with other grapes of excellence that are destitute of this quality. This flavor, thus improved, seems destined to form a distinctive characteristic

of an important class of American grapes, even to give them a marked superiority over such varieties as the Black Hamburgh, Sweet-water, and such other foreign sorts as are destitute of any special aroma, and consist mainly of sugar and water. It may yet make our seedlings rivals of the Muscats, the Frontignans, and other highly-flavored foreign grapes of the Old World. Multitudes of seedlings, deriving their origin from our native vines in various stages of civilization, and with a special view to this result, are now on probation in various parts of our country. From these must necessarily arise, in coming time, many sorts of superior quality.

What if the desire for new varieties has become a mania? What if it produce, here and there, personal sacrifices and disappointments? What if, from want of skill, or from adverse causes, many inferior or even worthless varieties are produced? The result is certain. The time fast approaches, when the ultimate good will be realized, and when America will become the great grape-growing and wine-producing country of the world.

I admit, in respect to all our fruits, that, as the number of varieties increases, more judicious and severe discrimination in the selection of very valuable, and in the rejection of comparatively inferior varieties will be demanded. This is the lesson which past progress teaches us. What would the gardener of fifty years ago have said, if he had been told that his favorite Bon Chretiens, Muscats, and Blanquets, were soon to be thrown into the shade forever? He would have shown as much incredulity as some of our modern amateurs do when we talk of future progress. The Duchesse d'Angoulême, the Beurré d'Anjou, Doyenné Boussock, Beurré Superfin, Bartlett, and Seckel, had not revealed to him the vast extent of improvement in fruits which was to be made. What was true, in this respect, fifty years ago, is equally applicable to present varieties. The impossible has no place in the history of progressive science, whether relating to natural arts, or to mechanical industry.

We have spoken here, and on former occasions, of the advancement which has been made in pomology in our age and country. This is to be ascribed in part to the great scheme of Providence which has developed such stupendous results in the march of civilization and all the arts of life. Human pursuits are allied by affinities so intimate, that a remarkable discovery or improvement in one advances them all. Never before has the public mind been so profoundly moved, nor the energies of mankind so concentrated upon efforts to relieve toil, to perfect skill, to reward labor, and to multiply the comforts and blessings of life.

Truly we live in an age of transition and wonder! The invention of to-day supersedes that of yesterday, and in its turn is to be supplanted by that of to-morrow. No enterprise, however bold, adventurous, or vast, whether the construction of a railroad from the Atlantic to the Pacific; the laying of the mystic wire in old ocean's bed, or threading it through Behring's Straits and winding it around the globe, is too great for the capital, energy, or intelligence of the present generation. * * *

The great industrial pursuit which this Society seeks to promote, furnishes testimony of progress not a whit behind the most favored of the arts.

Behold the improved methods of cultivation; the vast number of nurseries and orchards, springing up every where, as by enchantment; the novel processes of reproduction, multiplying plants in endless profusion, and as by the stroke of a magician's wand. Witness the interminable lists of varieties now in cultivation, increasing with each revolving year; the restless and anxious desire to obtain every thing new and promising, from whatever country or sea-girt isle it comes; the refined taste for choice fruits rapidly extending through every gradation of society; the standard of pomology, like the star of empire rising in the east, moving still onward to the west, and exciting the attention and astonishment of mankind.

But this progress results from no supernatural power. It is rather an illustration of human capability, acting in conformity with natural laws, and in harmony with the benevolent designs of the Great Husbandman for the amelioration of society, and the display of his infinite wisdom

and love, "sought out of those who take pleasure therein." It exhibits the conquests of mind over matter, the dominion of man over nature, improving, adorning, and elevating her to the highest and noblest purposes of her creation.

Inspired with these sentiments, let us take encouragement, and press on in the career of improvement, ever remembering that study and experience make the man; and that, for the highest attainment and the greatest success, we must depend upon the culture of the mind as well as of the soil.

"Survey the globe through every zone,
From Lima to Japan,
In lineaments of light 'tis shown
That CULTURE makes the man.
All that man has, had, hopes, can have,
Past, promised, or possessed,
Are fruits which CULTURE gives, or gave
At industry's behest."

FRUIT-GROWER'S SOCIETY OF WESTERN NEW YORK.

THE September Meeting of this Society was held at Rochester, on the 25th of September. We are greatly indebted to a friend for an excellent report of the proceedings, which we here give in a somewhat condensed form. The discussions seem to have been more direct than usually obtains on such occasions, and possess more than ordinary interest. The highest excellence was accorded to the Delaware, with great unanimity; but other good kinds were not overlooked. The report here follows.

The exhibition of fruit, which was very fine indeed, was made in conjunction with that of the Genesee Valley Horticultural Society, and attracted a great deal of attention, even from persons as conversant with excellent fruit culture as are the citizens of Rochester and the residents of its vicinity.

The display of grapes was finer than ever before made in Western New York, especially of Delaware, Diana, Concord, Rebecca, Hartford Prolific, &c., &c.; the comments upon which will be found in their place in the discussions herein reported.

After the usual formalities of organization, the morning session was opened with the discussion of the question of "The adaptation of standard or dwarf pears to different soils in our climate."

Col. HODGE, of Erie County, thought this question to be one of a great deal of importance, particularly to all pear cultivators. One great cause of the decided difference between cultivators in their success, is on account of the good or ill adaptation of the trees which they purchase to the soil on which they are to be planted. For instance, the owner of a fine farm with a very light, sandy or gravelly soil, sets out an orchard of pears or quinces, and the result is that he is probably unsuccessful in large profits.

Another farmer, with a stiffer mixture of clay with sand, or of a heavier, gravelly loam, neither too dry nor too wet, plants his orchard as dwarfs, and they succeed admirably.

At Buffalo the opinion prevails, that dwarf pear-trees upon a combination of clay and loam succeed admirably; and cultivators in Erie County have had full opportunity to test the results. The opinion also is, that standard pears succeed best upon deep, sandy soils, where the roots can penetrate deeply into the subsoil.

D. W. BEADLE, of Canada West, said, "We never fail, upon our soil, in growing good dwarf pears, although the soil is not as heavy as might seem to be necessary, from Col. Hodge's remarks. I never thought that ours was a soil which was clayey; we rather call it sandy. With us, we find that the Orange Quince bush really grows much finer, and produces better fruit, upon a somewhat clayey, heavy soil. The stock upon which pear-trees are budded, in order to dwarf them, is the Angers Quince, which is of a slightly different habit, not so much affected as the Orange Quince by differences in the composition of soils. The only real enemy which we

have in Canada to pear culture, either on standards or dwarfs, is the disease which we in our ignorance call the 'fire blight.'"

These remarks caused Col. Hodge to explain that, in his remarks as to sandy soils or clay soils, light or heavy, he spoke of the two extremes of soils. The soil at St. Catharine's is neither extreme—should call it a sandy loam, neither extremely wet nor extremely dry—and consequently was well adapted to the culture of either standards or dwarfs. Would say that the trees in Mr. Beadle's plantation are very fine, and the result in the growth of standards or in the growth of dwarfs is not much different. Would, however, repeat his meaning in the previous remarks, and that was, that the extremes of clayey and sandy soils differ in their adaptation to dwarf and standard pear-trees.

E. MOODY, of Niagara County, stated that upon his farm dwarfs did not, as a whole, succeed well. Most of the farm is a dry, gravelly soil; and standards succeed first-rate. Raises very fine Bartletts on standards, and excellent White Doyennés on standard. Beside the Ridge soil spoken of, Mr. Moody has some pretty stiff clay soil, of the character called a "retentive soil," upon which dwarfs do very well.

Has found that upon a heavy soil, the standards have a greater tendency to crack their fruit than the dwarfs had.

P. BARRY, of Monroe County, remarked that the dwarf pear must have a good deep, rich soil, and good cultivation, in order to succeed very well. It is certain that the standard will succeed (both as to growth and as to fruiting) in a soil where the dwarf will not; because the standard can be persuaded to grow upon a poorer, lighter soil. Would rather lay it down as a rule, that all pear-trees require a good soil and require good treatment. Mr. Barry's own trees of both descriptions are growing in a soil which, although quite light, is called by most persons a sandy loam; and has seen orchards doing equally well upon similar soil in other places. They did not have great enriching at any one time; but we give to them an annual manuring upon the surface, or a compost adapted to the nature of the soil, and lightly spaded in. On a small scale, the dwarf pear can be grown well upon any soil or in any locality; because if too sandy it can be mixed with loam or clay, and if too clayey the addition of sand will remedy the defect; but when we come to speak of the cultivation of pear-trees upon a large scale for profit, where these amendments can not easily be made to the quality of the soil, I would by no means advise the dwarf, or any other tree, to be planted upon a dry, light, gravelly, poor soil. As to dry, the soil must be dry any way—*that* is a requisite never to be omitted—but must be a dry, substantial loam, like what our farmers here call their best wheat soils.

It is difficult to classify soils; there are so many grades, and such imperceptible differences, which yet affect growth; but the skill and enterprise of cultivators of our various fruits, have overcome what would generally have been called impossibilities. Still, if any farmer have light, blowing sand upon one part of his premises, or wet, springy soil upon another, I would not plant any sort of pear-trees upon either of those soils.

As to which varieties of pear succeed best as dwarfs, much depends upon the selection of varieties. Every year confirms the opinion that Louise Bonne de Jersey is one of the very best sorts upon the quince. So, also, is Duchesse d'Angoulême. These two in particular will take the lead of all others. They bear good crops of fruit every year. They are long-lived, and grow thriftily, and are sure to bring in profit to the good cultivator. For permanent orchards, a society like this must always recommend such varieties as we know live to a good age and are profitable in good soils. If I were to add, I would say, Beurré Diel and Beurré d'Anjou.

H. N. LANGWORTHY, of Monroe County, could speak from experience as to the Louise Bonne, Bartlett, &c., upon a light sandy soil, among peach-trees. Had found that such land was too light, and that the trees did not grow well the first year; but that this year they grew well, some making a growth of over two feet, and perfected large, fine fruit, and a good crop of it too.

(To be continued.)



CALADIUM ARGYRITES.

for THE HORTICULTURIST.

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The Delaware Grape.

THE close of the year we propose to signalize by putting upon record our estimate of the Delaware Grape, not ostentatiously, but in few and simple words, and where all may see it. Our opinion of the Delaware, indeed, has been pretty well made up for five years past; but having been requested by friends who differ from us to give the subject another season's consideration, and examine the vine under a variety of soils and locations, we consented to do so, and the result has made us firmer in our faith. Some three years since, in a Fruit Committee report, we pronounced the Delaware the "King of the Natives," which expression did not seem to please the officers of the institute for whom we acted, and one exhibiter threatened never to exhibit again if such things were allowed! It is a matter of congratulation, however, that the world will move without such men, and notwithstanding all their efforts to impede its progress.

We wished to form our estimate of the Delaware as a grape adapted for *general cultivation*, and accordingly put ourself in communication with intelligent grape-growers in various sections of the country, avoiding mostly those engaged in the sale of plants; and the result has been a singular unanimity in regard to the character and hardiness of the grape, wherever it is grown. Our own experience has been, that it is perfectly hardy and very productive, and this experience has been confirmed by a personal examination extending over a considerable extent of country. But let us be a little more precise in regard to its hardiness, as this is a very important point. Throughout the Middle States the point seems to be generally conceded, the exceptions, so far as we can learn, being confined to weak young plants. The north-west, however, would seem to be the point where its hardiness would be put to the severest test. From this point, the testimony, fortunately, is favorable, and the Delaware, in this respect, takes rank with the hardiest. The testimony, it may be added, is not precisely uniform, but it is so general, that the exceptions may fairly be referred to causes extrinsic to the hardiness of the vine itself. The simple truth is, that the Delaware, in the process of propagation, has been manipulated to a degree that would have destroyed the principle of vitality in almost any other known variety; but this, we have reason to believe, will prove to be only a temporary inconvenience in the Delaware, such is its constitutional vigor. On the whole, we are warranted in concluding that the Delaware is adapted to the western and north-western sections of our country, to the degree at least to which the grape is now cultivated.

In regard to the South, there can be no doubt, as respects either its hardiness of its fitness, for it is grown there in the greatest perfection, as we have had good reason to know during the past season. There can be little doubt, moreover, in regard to the New England States, to a part of which we have given a personal examination; and we have testimony from Maine, New Hampshire, and Vermont, all in its favor. In regard to its hardiness, therefore, we think we are warranted in saying that the Delaware is adapted to *general cultivation*.

The next point we shall examine is its *vigor*. It has been objected to the Delaware by some, that it is a weak grower, producing only small and slender shoots. That it is often found making a slender growth is not denied ; but this is sufficiently accounted for by the manner in which it has been propagated, and by improper planting. In the course of a couple of years it recovers its vigor, and grows as well as the Catawba or Isabella, and, in our own experience, much better. But even with its present tenuity it will make a good growth the first season, when judiciously and carefully planted. We have directed the planting of a considerable number during the past season ; the plants were mostly eyes one year old, and the growth has been from four to six feet of good wood about a quarter of an inch in diameter ; in some cases the growth has considerably exceeded this. In many instances of failure, the ground has been badly prepared, and the vines carelessly planted; where these points have been attended to, the result, so far as we know, has been entirely satisfactory. We have seen vines four and five years old, in thoroughly prepared ground, where the growth has been quite equal to that of the Isabella of the same age. Judging, then, from what we have seen, and from our own experience, we must conclude that the Delaware is unexceptionable in point of constitutional vigor.

As intimately connected with this point, we shall next allude to the charge of *mildew*, to which, it is said, the Delaware is *peculiarly* liable. We have given no inconsiderable share of attention to this point, as pertaining to the vine generally ; and we are compelled to say, that all vines, under certain conditions, are more or less liable to some form of it. Without anticipating a subject which we shall at some future time treat specially, we may as well here state our conviction, that the mildew, so called, will, as the number of vineyards increase, constitute one of the most formidable enemies with which the vine-grower will have to contend; and it is well that he should know it, and prepare himself for it. The past season has been one in which the mildew has prevailed to a greater extent than we have ever known it before ; probably none of our native vines have been entirely free from it in some locality or other. According to our observation, no special charge can be made against the Delaware in this respect ; on the contrary, where found growing promiscuously with other kinds, it has, in many cases, formed an exception. On the whole, we sum up by deciding that the charge against the Delaware of being *specially* liable to mildew, is not sustained.

The next point to which we shall direct our attention is that of *fruitfulness*. It has been urged by some as a serious objection to the Delaware, that it is not productive, and that the bunches and berries are very small. In regard to this, we presume that no intelligent vine-grower will claim that any vine that has been propagated to the extent that the Delaware has, or, indeed, any young vine, will in its early stages give any just indication of its maximum productiveness. Age is necessary to the vine, in order that it may yield it best results. We are inclined to believe that the Delaware has been underrated, in this respect, by a great many. It must be admitted that the bunches and berries are small, though not as small as some have supposed. In vines that have attained to the age of five years, the bunches approach what is called medium size ; but in weight of fruit from a given surface or number of vines, the Delaware surpasses both the Isabella and Catawba. A Delaware vine in full bearing is, indeed, a beautiful sight ; one that we have never seen equalled among all our native grapes. In view of these

facts, we can not consider the size of the Delaware a serious objection to it; still we can not help sympathizing with those who wish that the bunches and berries were both larger.

We shall next pass to the point of its *nativity*, which has been the source of a prolonged and warm controversy. As before stated, we have deferred publishing our opinion of the Delaware in these pages out of deference to friends who had requested us to examine it during another season. We have done so, and we are more than ever confirmed in the opinion expressed several years ago, that the Delaware is a native. With such testimony as we have before us, we can arrive at no other conclusion. If we ever had a doubt lingering in our mind, it has been dissipated by an examination of the seedlings raised from the Delaware. We can not go into an examination of our reasons here, as this article already exceeds the length we have assigned to our leaders; but we shall do so in a separate article. We may state briefly here, however, that our opinion has been arrived at from the fact that many of the seedlings of the Delaware show unmistakable evidence of reverting back to the native (American) type, especially in the texture and pubescence of the leaves; that the hardiness, habit, foliage, &c., of the Delaware itself indicate a native origin; that the peculiar division of the pulp and skin, as found in the Delaware, is characteristic of our native grapes; that it has traces of the peculiar aroma of the native grape, &c., &c. We believe that the Delaware is of the same parentage as the Catawba, and that the Diana is a connecting link between them, the last and the Delaware having not a few points in common. It was sought at one time to identify the Delaware with the Red Traminer, but this, we believe, has been abandoned, since they are quite distinct from each other in wood, foliage, and fruit. Some of our friends will not agree with us, probably, in our opinion of the nativity of the Delaware; but we can differ from them, we trust, without impairing our respect for their honest convictions.

Our last point relates to *quality*, and here, with a very few exceptions, all opposition to the Delaware fairly breaks down. It ought to be considered an impeachment of a man's good taste to doubt its excellence. We want a class of grapes of the first excellence, productive, and so hardy as to be suited for cultivation in all sections of the country; and the Delaware, in our opinion, possesses these requirements to a greater degree than any other grape that we have. For this reason we shall adopt it as the *standard of excellence* by which to judge all new comers. It possesses the merit of being not only our best table grape, but also the best for wine, in the estimation of such men as Messrs. Mottier, Schnicke, and others, whose testimony to this effect we shall soon lay before our readers. It is pleasant to find the great mass agreed on one point at least in regard to the Delaware. Its melting tenderness, its delicious sweetness, and its delicate vinous spirit, gladden the heart of all who eat it. We claim for it the merit of being the first American grape to truly educate and form the public taste. But it may be said that all do not consider it equally good; we know there are some who, without denying its high qualities, think that it has been overestimated. Its excellence has certainly been lauded in exalted terms, and we must confess that we delight to sing its praises. It carries us a long way up the classic mount, and makes us familiar with such food as the Olympians may be supposed to have delighted in. With it we can be content till another shall give us a taste of something more celestial.

FORWARDING LETTUCE IN COLD FRAMES.

BY PETER HENDERSON, JERSEY CITY.

Mr. Editor :—I sent a paper on this subject to an agricultural journal some years ago, but our experience since has enabled us to improve somewhat on our practice at that time ; and, besides, the Horticulturist goes among a class of readers whose interest is more direct in such matters than those of the journal referred to, which may excuse me for again giving our experience.

The forwarding of Lettuce in cold frames, like all other products raised for market, has been much simplified of late years, by the necessities of the parties engaged in the business ; together with the yearly increase of sharp competition, which compels us to get at the quickest and cheapest method of obtaining the desired result.

The first object is to select a dry and sheltered spot for the frame yard, which should be inclosed on the north and west sides by a board fence six feet high. The frames are then run parallel with either fence, as the fall of the ground will best suit, and three feet from it, each frame being also three feet apart ; that is, the path between is three feet in width. The frames are made of a 12-inch spruce plank for the back, and a 9 or 10-inch one for the front, giving a fall only of 2 or 3 inches in the 6 feet—the length of the sash.

The most convenient length found for each section of frame is 60 feet or 20 sashes. No dividing bars are used between the sashes, but instead, stays are placed about every ten feet inside the boards, to keep them from falling inward, which they have a great tendency to do, as the soil inside the frame is kept soft by digging, while the pathway, of course, is hard.

The seed is sown for the crop from 20th to 30th September, either in the frames, there to remain, or else outside, and "pricked out" into the frames, at the rate of 500 plants to each sash. We usually adopt both methods, the pricked out plants being the best if they winter well ; but the sown plants are usually the safest.

They rarely require to be covered with the sashes at night in this district until the middle of November, and care is taken to expose them as much as possible in all mild weather during winter. No covering is used but the sashes. The costly and troublesome covering by straw mats we have never used, though they are still thought by many to be indispensable.

The varieties of Lettuce used are the Brown Dutch or Winter, Butter, and Curled Silesia ; this last being for the main crop, fifty of it being sold to one of the others. The planting out in the frames for heading up is usually deferred until the first week in March, experience having shown us that no matter how fine the weather may be, much earlier than that, nothing is gained by planting.

Three or four inches of rotted manure being dug into the frames, and the surface finely levelled with a rake, fifty plants are planted in a 3-ft. by 6 sash. It is ready for market from the 20th of April to the 20th of May, and averages about $4 per 100, or $2 per sash. But to make the sashes do a little more duty, in about two weeks after the Lettuce is planted, parsley seed is sown between the rows, which being rather slow to germinate, is just coming up at the time the Lettuce is cut off, but is still two weeks ahead of that from

the open ground; being thus much earlier, it sells well, giving about $1 more per sash. After the first cutting off of the Parsley, it is allowed to grow on undisturbed until the middle of September, when it is cut off close to the ground, to produce a crop of *new* leaves for winter. It is covered by sashes at the same time, and used in every respect during winter like the Lettuce *plants*, and marketed during the winter months, bringing again about $1 per sash, all being sold off to admit of the planting of the Lettuce again in March. Thus the double crop of Lettuce and Parsley gives about $4 per sash, the sashes being in use only from the middle of November to the middle of May.

It is still the practice of many private gardeners, and market gardeners in country towns, to plant in the fall the Lettuce wanted for spring use, in frames as they are to head up. This is a tedious and troublesome practice, resulting in giving a tougher salad, very little earlier than that planted in spring; and if earlier, of no advantage to the grower for market. Lettuce, like most vegetables, has a season, and only a limited quantity is wanted out of that season; hence, if the large quantities sold in the New York markets in May were offered in April, they could not be disposed of hardly at any price.

The increase in consumption of Lettuce forwarded in this manner has been enormous; far more so than with any other vegetable I have had to do with. Yet it may be gratifying to beginners to know that, though hundreds are now engaged in it, prices are quite as good now as they have been at any time during my time in the business, which has now been upwards of a dozen years.

[The above is by one of the most accomplished and intelligent market gardeners about New York. It contains the matured results of many years' experience, abounds in good sense, and possesses a practical value which our readers will not fail to appreciate. We have a promise of more from the same source.—Ed.]

THE CALIFORNIA GRAPE.

BY M. KELLAR, LOS ANGELES, CAL.

It is conceded by all agricultural societies, as well as by all others interested in the cultivation of the grape for the manufacture of wine, that there is really no suitable and productive wine grape, either foreign or native, to be found in the Atlantic States. Here in California, where the climate and soil are so unexceptionably adapted to the culture of the grape, native and foreign grapes have been tried, without finding one that can merit extensive cultivation. I myself have imported various sorts from the climate of Paris, in the hope that coming from a colder district, they might succeed better than others that have been imported from the southern parts of France, but with no better success.

There is a wild grape in California that is not, perhaps, worth cultivation. The grape in general cultivation is a Spanish grape, resembling very much the Madeira, first introduced into Mexico by the early Mission Fathers, and from thence to the Californias, (after a thousand trials, perhaps.) It is probably the most productive bearer in the world, the most delicious desert

grape, and at the same time has all the fine qualities necessary for making a first class wine. There is no doubt that, in honest and skilful hands, it will make excellent Champagne: it has abundance of saccharine matter which gives body, a primary requisite for making sparkling wines: it is what the Catawba lacks.

An abortive attempt at making Champagne out of California wine has been made in San Francisco, which utterly failed as soon as they commenced making it out of new wine in the first year not sufficiently fermented. It takes three years to make *good* Champagne; any thing short of this induces the factitious necessity of impregnating it with carbonic acid gas, &c.; such lame attempts are well calculated to bring discredit upon a wine not fairly started. It is a business that requires a heavy capital to keep several crops on hand until the wine is truly *ripe*.

Now what I want to come at is this: I am advised from different parts of the Southern States that the California grape has been tried there, and found to succeed far better than any other in cultivation; and I can not see any good reason to the contrary, judging by analogy, since none of the sorts in use in the Atlantic States, or the continent of Europe, succeed in California, except the Spanish grape already alluded to; therefore it is quite probable that the California grape may succeed in all the Atlantic slope immeasurably better than any that has been tried; or, in other words, succeed as it does in California. If this is so, and I am assured that it is, it will be a great boon to wine-growers, and a source of great wealth to the country. No branch of agriculture is half so productive as grape-growing, when well started, and none that requires less labor.

For surely the difference is very great between making an average of 200 gallons to the acre, the vines being planted three feet by five, &c., as in Ohio, Missouri, and other places, and 1200 gallons to the acre, as in California, the vines being planted six feet each way, pruned low, without stakes or scaffolding, and cultivated with ease by the plow.

As I said before, if it be true that the California grape will succeed immensely better than any other in cultivation, it is a matter of the highest national importance. I believe that it is so, and in proof, I have now on hands orders for 80 or 90,000 grape plants and cuttings from various points of Southern States and the Patent Office.

[We are by no means willing to concede that there is no "suitable and productive wine grape to be found in the Atlantic States." On the contrary, we are quite prepared to take the affirmative on this question, and to prove that we have several good wine grapes, such as Delaware, Lincoln, Herbemont, and Diana. We have letters from Messrs. Schnicke, Mottier, and others on this subject, which we shall soon publish. The Delaware makes a wine which will compare very favorably with the Hermitage. We think you made somewhat of a mistake in importing vines from the climate of Paris to make wine from in California; we should hardly have gone there; but we think you will yet find a native quite suited to your purpose. In regard to the Los Angeles grape, to which we suppose you refer under the name of the California grape, we tried it here in the vicinity of New York some five years since, but succeeded very ill with it, since it was almost sure to be winter killed to the ground. In some portions of the South, however, it has been tried, and our friends there speak well of it. It is no doubt worthy of a further trial in that region of country, to which it would seem to be well adapted,

and we think little risk would be ran in planting it. We should be glad to have Mr. Kellar give us a minute description of the grape, as it grows in California.—Ed.]

FERNS AND LYCOPODIUMS.

BY DANIEL BARKER.

Throughout Europe no family of plants are more popular, and certainly none possess more claims to admiration. My love for this interesting and beautiful class of plants existed long before they became such general favorites, at a time when they were little known or noticed, save to the student, or in botanical gardens and collections. Some twenty-five years have come and gone since I, in company with a loved one, went in search, over mountain and through morass and secluded valley, to collect our special favorites, and no known or unknown variety within our reach escaped our notice. And how delightful, after hours of pleasant toil, to return to our cherished homes to examine their elegant and graceful fronds, their inimitable beauty, and lovely shades of color. To my loved companion it was a never-failing charm, to collect and cultivate her especial pets; and I can never forget what a great amount of pleasure we all experienced when returning from a botanical ramble of some dozen or more miles, and sitting around our "ain fireside," in company with many dear ones, now gone to return no more. But I am digressing.

The great value of the interesting Cryptogamia consists in their intrinsic beauty, and in their applicability to specific purposes: for growing in very shady places where very few other plants can grow. They are singularly useful for covering rocks, where but little soil can be placed; they are equally at home for covering unsightly walls, either in green or hothouses, or the open air; for suspending in wire or rustic baskets from the roofs of greenhouses, conservatories, &c.; for enriching and decorating any rustic work, or for cultivating in the popular and highly decorative portable plant cases. One of their greatest merits is, that they are never out of place, in the secluded part of the garden, or any glass structure, the sitting-room, hall, or drawing-room; in all of which they are always green, elegant, and charming, and as an adjunct to bouquets they are a positive necessity.

They are valuable, as I have said, for planting in shady situations, where but few other plants will grow; indeed, whether it be in the greenhouse or the open air, the majority of the species luxuriate in a shady place, where the direct rays of the sun never fall. In such situations they are enabled to exhibit all their gracefulness and delicacy of structure, and the ever fresh loveliness of their beautiful verdure.

Some, it is true, are often found in very exposed situations, clinging to the face of rocks where there is comparatively no soil, and where it would be thought no plant bearing such an abundance of foliage could exist. Such is often the case with our exquisite Adiantum pedatum, Woodsia ilvensis, Dicksonia pilosiuscula, &c.; but these are the exceptions: as a general rule throughout the globe, plants of this order live and luxuriate in the shade. Hence the Rockery should have a northern aspect; the entrance to a grotto, or in the neighborhood of irregular masses of rock, or sylvan retreats, the

shady part of any building, bare walls of green or hothouses, or in any location overcanopied by foliage, present the very best places for them. Rockeries in the open air or otherwise are likewise well adapted for Ferns. Here is the natural home of many of our most beautiful species, and in all our rocky and sylvan retreats they are quite abundant.

Enriched with their graceful and elegant habits, the brightest flowers seem brighter, and those of tamer colors become much more striking. Those who have used them for grouping with orchids when in bloom, as is the custom in many of the large establishments in Europe, are never afterwards satisfied to see them otherwise, or with well bloomed specimens of Gloxinias, Gesnerias, Achimenes, or any other kind of flowers.

Much more might be added upon their culture (which is very simple) in the green and hothouse, the open air, and in the elegant portable plant (*not Wardian*) case.

Animated with a desire to see them more cultivated than at present, I may at some future time (should it be thought desirable) offer some remarks upon their culture, and endeavor to show that *all classes*, from the millionaire to the most humble artisan, may possess and cultivate at least a few of them. To me no house devoted to flowers seems complete without them.

[You have taken up a most interesting class of plants. Follow up with directions for special treatment, including plant cases, &c. Ferns and Lycopodiums have heretofore been confined to the few, but they are preëminently the plants for the million, especially for winter culture. As intimately associated with these, take up Orchids next, Mr. Barker, and go into details. We want more knowledge on the treatment of Orchids, and your long familiarity with them ought to enable you to supply it.—Ed.]

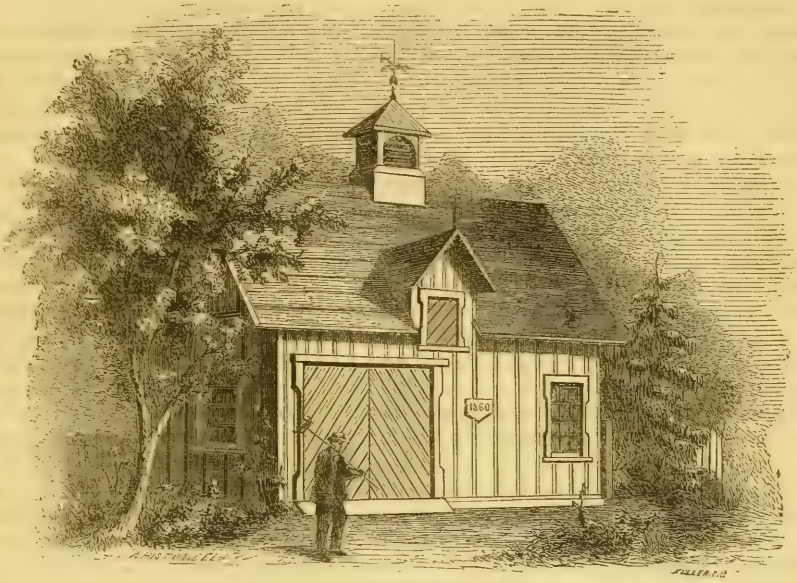
DESIGNS IN RURAL ARCHITECTURE.—No. VIII.—A COTTAGE STABLE.

BY GEORGE E. HARNEY, LYNN, MASS.

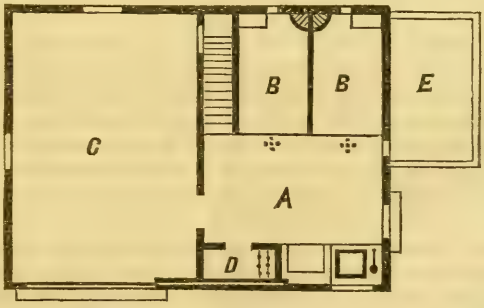
The subject of proper stabling and grooming for horses is one that has been wofully neglected in this country until within a very few years.

In former times a stable, and more especially a country stable, was oftentimes merely a shanty, serving only to shelter the animal from the hot sun of summer, or from being completely buried in the snows of winter. As for comfort, that was out of the question, and warmth was only partially preserved by the thick, clumsy coat of fur with which, for want of proper artificial clothing, Nature had mercifully provided him.

But we are happy to say things have changed in this respect, and people are beginning to enlighten themselves on the subject. In these days a horse is looked upon as an intelligent creature, inferior only to man, his master, in tractability, and in requirements yielding to none but him ; consequently we see the need of building stables thoroughly, with a plenty of room, a plenty of light, and of having them well ventilated, on scientific principles, that they may be cool in summer, and warm in winter, and *airy* at all seasons ; of giving the exterior a pleasing architectural appearance, according



A COTTAGE STABLE.



in style with the dwelling-house of which it is an adjunct ; of keeping its yard and the adjoining grounds always clean and in good order ; in fact, making the stable a pleasing object in the landscape picture of the estate, and a cheerful, comfortable, inviting place for its occupants.

Every stable should consist of two distinct apartments ; the one for carriages, and the other for horses. The horse apartment should contain the stalls, each five feet wide, and eight feet long, or eighteen feet to the back wall, with the floor, either of plank or brick set on edge, slanting backwards two and a half or three inches. At the rear of the stalls should be a depression in the floor, bored with half a dozen auger holes to convey away urine. A cast-iron feed box should be fitted to one corner, and a hay-rack of iron wire to the other corner of each. From a convenient position stairs should rise to the hay-loft above. Near the outer door should be a pump and trough to supply fresh water at all times ; and close by, chests for oats, meal, and corn, and a trough for mixing feed, all lined with zinc, and furnished with a cover and lock. A closet should contain half a dozen pegs for harness, a couple of drawers for blankets, &c., a rack for whips, and a small cupboard for medicines, oils, blackings, &c. From the ceiling of the horse room an air shaft, supplied with a trap valve, should be carried through the hay-loft, terminating in the ventilator on the roof. This, with ventilators in the doors, will give a thorough current of pure air at all times.

All the outside doors should have an extra set of hinges to hang gates upon, which should be used in summer instead of close doors.

Thus we have endeavored to give a few simple directions for building and furnishing a country stable of moderate size. The accompanying design will explain more fully the details we have noticed, and may answer as a guide to those about building.

It contains accommodation for two horses and two carriages, and may be constructed for two hundred and fifty dollars.

CULTIVATION OF WILD FLOWERS.

BY C. N. BEMENT.

In the August number of this Magazine we gave a short catalogue of wild plants which we deemed worthy of cultivation, and promised to extend the list at some future time. We now redeem that promise by giving the following, which we consider meritorious and worth attention.

To those interested in floriculture, we would recommend, for the advancement of their gardens, one great storehouse of beauty, viz., the woods and fields, with their wealth of uncultivated blossoms. It is in the power of almost every one to draw from this source, and, such is the perversity of human nature, perhaps on this very account the opportunity is neglected. While various flowers, neither graceful nor fragrant, are admitted into the limited precincts of a garden, because, perhaps, they are rare, of difficult growth, or foreign extraction, many a wild, sweet native of our own hills and valleys would be altogether denied a place there. This is in bad taste, and the usual plea, " Oh ! they are so common !" is by no means a reasonable or satisfactory objection. Whatever is perfectly beautiful might claim

a place, though this would include so immense a collection, that, of course, we would recommend a judicious selection from so vast a stock.

We find upon trial some of our native plants rather difficult to cultivate; and after a few years they entirely disappear, unless special care is bestowed upon them, and their habits studied. They appear to suffer more from the effects of freezing and thawing in the winter, thus injuring the crown of their roots; or, being thrown out of the ground by the action of the frost, they are destroyed. They receive some protection in a natural state by being in winter covered with water, grass, leaves, or snow; and should likewise be protected under cultivation, by throwing over them straw, hay, litter, or earth.

The names of the comparatively tender plants are: the *Asclepias tuberosa*, with its bright orange-colored flowers. It is a rare plant in this vicinity, and we know of none in a wild state. We found it on the sandy plains four miles north-west of Albany. The rich flowering *Liatris scariosa*, with its raceme of bright purple flowers. Its root is a solid tuber, and truncated; that is, it has the appearance of its end being bitten off. The popular name of this plant is the "Devil's Bit." We were informed, many years ago, by an old root doctor, that it received its appellation in this way: It having come to the knowledge of the great adversary that this plant was useful to mankind, and possessed great medicinal properties, he, in order to show his enmity to our race, bit off the end of the root, thereby depriving it of its most useful properties. Upon doubting the truth of the legend, and observing to him that the roots of some other plants presented the truncated form, "Why, bless me!" replied the old man, "don't you see the marks of his teeth?"

The Liatris is found growing in a clayey soil, on the borders of woods. To this family we are indebted for many of our autumn ornaments in our flower-garden borders. They are herbaceous plants, propagated by division, and flourishing in common garden soil. Fine specimens of this plant can be easily obtained by seedlings.

The Indian Turnip or *Arum*, with its singular flower, variegated inside with stripes of pale green or brown. In autumn, the plant presents its bunches of shining scarlet berries.

The splendid Cardinal Flower, *Lobelia cardinalis*, when once introduced into a garden, will propagate itself by its seeds, and produce some fine plants.

There is another tribe of native plants that require no particular attention, but when once introduced into the garden, continue to grow and thrive for many years. The names of some of these are the *Starworts*, some of which are very beautiful and showy, and can be made to grow to the height of ten feet, bearing upon their spreading tops quite a large number of flowers.

The Golden Rods, *Salidago*, many of them coarse but showy plants. Hardy herbaceous plants, all yellow flowered; found in all parts of the country. Propagated by division of the plant in spring in common soil. Showy at the back of herbaceous flowers.

By taking up, in the autumn, the Side-saddle Flower, *Sarracenia purpurea*, with the wet sphagnum attached to its roots, put into water, and cultivated like the Hyacinth, and placed on a parlor window, it will flourish, and show its curious flowers toward spring. Half hardy perennial. Division

in spring ; fibry peat and chopped sphagnum moss ; a pit or frame will be necessary for their cultivation to keep them from freezing in winter, and to afford them a clear humid atmosphere in summer.

Many persons who set about filling a border with choice flowering plants, and who wish to make a selection of those both easy of culture and beautiful, are at a loss which to select among the thousands offered by seedsmen and florists. It is not our purpose, in this article, to offer a select list, but to make some remarks on a few of our *wild* plants worthy of cultivation. We omitted to mention in our former article :

The Scarlet Columbine, *Aquilegia Canadensis.* This well-known plant grows on dry rocky hills and in gravelly soil ; of elegant habit, and bearing delicate, pendulous, scarlet and yellow mixed flowers ; very showy. When removed from its wild locality to the richer soil of the garden, it grows with great luxuriance, and produces tenfold more flowers than in its wild state ; but it should be transplanted into fresh soil every second or third year.

The White English Columbine should be planted together for the contrast of color. When thus situated, beautiful hybrids can easily be obtained from the seeds of the English Columbine, partaking of the character of both species, and distinct from either. Seeds in March ; common soil. Seedlings flower sometimes the first, but generally the second season. All hardy herbaceous perennials. May be found growing from Canada to South Carolina.

Lily of the Valley, *Convallaria majalis,* deserves a place in every garden. It thrives best in a shady situation ; a low growing plant, with racemes of white, sweet-scented flowers, and is very hardy.

Trillium ovatum. There are eleven varieties or species of these plants in this country, from Canada to South Carolina. Some one or other may be found in most of our low, woody swamps, or on the borders of them. They are a curious tribe of plants, and very ornamental, flowering in May. The flowers are universally of three petals, and the leaves grow also in threes, called by botanists *trifoliate ;* probably from this circumstance the name "Trillium" is derived: they are all natives of shady woods and swamps. They can be transplanted and cultivated in the common garden soil, and ought, therefore, to be planted in the border.

Pond Lily, *Nymphæa odorata flore pleno.* There are four species of these plants in this country, of which the *odorata* is the most common and most beautiful. The flowers are white, tinged with yellow, and highly fragrant. Common in shallow ponds. We have noticed them in a mill-pond at the Shaker Village, near Albany ; in Irondequoit Bay, Lake Ontario. They are also found in mill-ponds in the vicinity of Poughkeepsie. Propagated by seeds, division of the roots of some, and separating the tube-like bottoms of others. They like a rich or loamy soil, and plenty of water about them.

Water Lily, *Nuphar Kalmiana,* small yellow, native of Canada, and the *lutea,* also yellow ; not plenty in this section.

The Hare-bell, *Campanula rotundifolia,* is worth cultivating for its poetic associations. The annuals are chiefly pretty low-growing plants, the seeds of which may be sown in the common border in the beginning of April. The biennials may be sown in April or beginning of May; many of them will bloom the same year ; by cuttings, a perennial habit will be given to them. Perennials, chiefly by divisions of the roots and plants. Common

soil for most of them ; a little peat and dung for them in pots. Flowers blue.

We propose, if agreeable to the Editor, to furnish an article on the cultivation of such trees and shrubs as are distinguished for their beauty or singularity, together with the soil and locality in which they flourish.

[Certainly, we shall be glad to have it.—Ed.]

CALADIUM ARGYRITES.

(*See Frontispiece.*)

BY THE EDITOR.

We present for a Frontispiece this month a drawing of the *Caladium argyrites*. The drawing was taken from a very fine plant in the collection of C. Van Voorst, Esq., who, we believe, was the first to import it. It is, in our estimation, much the prettiest of the Caladiums. The whole plant is one of great delicacy ; the green is very soft, and the white pure, and the contrast is striking and beautiful. It is a hothouse plant, and delights in a warm moist atmosphere. The plant in the frontispiece is of the natural size. It deserves a place in the smallest collection of ornamental leaved plants. We have in preparation a plate of the Caladium Chantinii, with which we shall give directions for the cultivation of the Caladiums.

THE OPORTO GRAPE.

BY E. WARE SYLVESTER, LYONS, N. Y.

A few years since my attention was directed to a grape cultivated by farmers and amateurs in this vicinity, for the manufacture of wine for medical, sacramental, and social purposes. The cut is a good representation, drawn by actual measurement from a cluster this season. The skin is black, covered with bloom; the juice is thick, and when fully ripe, dark red, staining the hands a purple color, and imparting to wine made from it, without water, the dark color usual to Port wine.

There is an opinion that the original vine was given to Miss or Mrs. Dunlap, by a ship captain, and that he brought it direct from the city of Oporto, which would make it a foreign grape; but the growth of the wood, the shape and texture of the leaves, its perfect hardiness, with the vines never laid down, in latitude 43° north, lead me to the conclusion that it is an American seedling, though it may be the child of foreign parents. Having asked the opinion of N. Longworth, Esq., on the subject, he writes, "If the Oporto is perfectly hardy, I can not think it a foreign grape."

The wine made from it has the flavor and peculiar bouquet of old Port, and is pronounced by good judges nearly or quite equal to the best imported Port; and there is no doubt in my own mind that from this vine may be manufactured a wine which would supersede the foreign article.

[We received a box of the Oporto grape with the above, and also a couple of samples of the wine, evidently not made by skilful hands, but still pre-



THE OPORTO GRAPE.

senting evidence that a good wine can be made from this grape. Mr. Sylvester's seems to be a fair description of the grape. The bunch is small, slightly shouldered; berries small, round, black, with a bloom, and a dark purple coloring matter under the skin; pulp firm and mucilaginous. It is not a table grape, but may prove of value for wine. We think it closely resembles the Marion. It is undoubtedly a native. We would suggest to Mr. Sylvester's friends, who made the wine sent us, that they omit both sugar and water in its manufacture. The sooner it is understood that additions of these kinds are a positive injury, the sooner we shall have first-class wines. Let us by all means have "the pure juice of the grape."—Ed.]

A VISIT TO THE SHAKERS—GRAPE-GROWING AT NEW LEBANON.

BY WILLIAM BACON, RICHMOND, MASS.

A YEAR ago last spring we made an engagement to visit this settlement in early autumn, and test the qualities of the produce of such of the fifteen hundred seedling vines raised by Philemon Stewart, as the season should bring into bearing; but, unfortunately, the frost of June gave a finale to all the grapes set at that time, and this was a finishing stroke to the prospects of fair specimens for that year, though we were pleased to notice that a new crop followed that frost, many of which attained a fair maturity.

The opening of the present spring brought to our mind the beautiful young vines of New Lebanon, and we renewed the promise that, if circumstances favored, we would this year enjoy the luxury from which the last cut us off, and witness the triumphs of Mr. Stewart's labors.

Accordingly, on the 3d of October, one of the few clear and sunny mornings that have smiled on our northern region this fall, we set forth on what is always a pleasure to us, a jaunt across the Taconic hills, and a visit to this hospitable community. The road, be it regretted, is not altogether of such a character as to make one's way smooth and easy over the ups and downs of nature's clivities. Here the water had taken advantage of the earth, loosened by travel, and worn its course lengthwise of the road, until an obtrusive rock barred its further progress, and turned it into the weed-grown side ditch. Anon, a water-course had caved in, and left no memorial of its former being but a deep slough half filled with stones. This we found on the Massachusetts side of the hill, in a section without inhabitants for some distance, rendering it still worse if accident should happen to life or limb of the traveller.

Good roads we have ever considered among the prominent features of refined rural life, and we deeply regret that in so many places these thoroughfares, so essential to human progress and human comfort, are becoming so sadly neglected.

The neatness and order with which the Shakers manage their affairs, are too well known to need any comments. It is only necessary to visit them to find very much in their habits worthy of imitation. There are no communities more hospitable to their friends than they, and none more cheerful in their habits. Travellers may speak of them as stiff and formal; but if

they knew them better, and won their confidence with greater courtesy, they would see the error of such uncalled-for opinions.

Something over a year ago we were shown, by Philemon Stewart, a large lot of grape-vines, originated by him from seed. Few of them at that time were coming into bearing, and the late frosts of June, of that year, prevented those that would otherwise have done so, from giving even tolerable specimens.

The last season has, however, been more fortunate. Of the hundreds of vines, many have now shown their first fruit. As any one would expect, it was a strange and mixed variety. Some worthless, some ordinary, and a few promising well. Of those that bid fair, we tasted some twelve or fifteen varieties. These are to be made subjects of further culture, and when their character is fully established, Mr. Stewart proposes to submit them to the action of some reliable pomological society for character and name.

It has required much labor and anxious care to bring these vines forward to their present condition, as, so far as present appearances can show, there is a reasonable prospect of remunerative success. Indeed, should one new variety of desirable qualities of flavor and hardiness be the result, the work will be a triumph. If more than one, all the better. What we most need is *good* hardy grapes, such as will meet the culture of all circumstances, and bless the million with their healthful clusters. The man who will originate such a variety will surely be a public benefactor.

During the past year Mr. Stewart has been removed, to take charge of a society in Maine, near Portland. He informed me, in his recent visit to Lebanon, that he proposed in the spring to start vines of his better varieties in that locality, to test their qualities in a more northern home.

We inquired what manure was best adapted to the vine? These seedlings have thus far been left to nature, and grown without manure or pruning thus far. But for grapes under culture, bones are considered first. We saw a large pile of these in preparation, with muck taken from a pond, soap suds, and like material.

In this Society we saw a beautiful plantation of Pears on the Quince. Their method of cultivating them was novel to us. Instead of setting them with the junction of the Pear at or below the surface, they had been put at about the same depth they stood in the nursery, and hillocks of compost rising twelve or fourteen inches above them. We demurred at this system of culture, but was told that it had been designed to raise the general surface as high as the hillocks, by bringing on a prepared soil: a laborious operation, truly, but no doubt a salutary one when adopted.

They have been very successful with these dwarfs so far, and we would recommend unbelievers in this system of culture to visit a few such plantations. They would see the thing is possible, and in some instances practicable.

In the natural world nothing runs to waste, nothing is lost even in decay. The leaves of the forest that fall annually—the old giant trees which, after centuries of existence, make the earth groan as they come down to lay their monster trunks asleep upon its bosom, decay and become parts of new vegetations, to smile again in youthful beauty, feeding the flowers and swelling the fruits.

In their usual economy, this Society allow nothing to waste. The slightest refuse, instead of being allowed to lie and moulder away, and poison the

air, is carried off and deposited for some special uses. At one of the families of sixty persons we saw a specimen of this saving operation, well worthy of general imitation. We were shown a new building, neatly finished and painted, in the rear, and under which, entirely inclosed, is a vault some fifteen feet by twenty, and ten feet deep, stoned and laid in water lime. Over the eastern portion of this was a privy, neatly arranged. Entering through the east wall was an iron pipe of sufficient capacity, the outlet of a subterranean drain leading from the dwelling, and designed to convey all the wash of the house to this reservoir. On two sides of the reservoir were spacious platforms for the storage of such materials as they choose, to be thrown into the vault as absorbents and neutralizers. In this way they will manufacture great quantities of valuable manure from materials which are too often wasted, and do it in a way conducive to health by taking what is too often allowed to poison the air by evaporation. If arrangements of a similar character could be furnished in the public places of cities and large towns, would they not be a great accommodation to the people as hygienic auxiliaries, and to cultivators in the country from the increase of fertilizing material they would afford?

It appears to us, from a view of this arrangement, that similar ones might be provided on public squares of cities and large villages, and made profitable investments to any one who would erect and take charge of them. There would certainly be nothing repulsive in the appearance of such a building as the one we saw in New Lebanon. But if it should appear so to others, let it be screened by a clump of trees or arbor of vines. We are sure if they were once adopted, the public would not readily have them removed.

[A valuable suggestion, not only for towns and cities, but for every homestead in the land. We might often learn useful lessons from those we affect to despise.—Ed.]

THE GOLDEN DATE (PHŒNIX DACTYLIFERA.)

BY WM. N. WHITE, ATHENS, GA.

We see by the newspapers that the Date, the current year, has been successfully grown in the south of France. It may not be known that for some years past it has been grown in the open air in the United States. A magnificent cluster of the variety named at the head of this article, was one of the attractions at the late Fair of the Southern Central Agricultural Society of Georgia, at Atlanta, and seemed to be looked upon with more interest than almost any other thing exhibited. Hanging on the wall, near two large olive branches, also loaded with ripening fruit, and in company with Oranges and Pomegranates, all grown in the open air, to say nothing of Figs and Grapes, one was forcibly reminded of the East; but in the same structure the Apples in profusion, the Pears and Peaches, excellent and beautiful, told of the resources of a State at one extreme productive in tropical fruits, while its central portion and northern extreme were profuse in the products of the milder temperate climes.

The Dates mentioned, and the Olives also, were grown upon the plantation of Col. P. M. Nightengale, at Dungeness, Cumberland Island, Georgia. The cluster sent was gathered from a tree about twenty-five feet high, on which were four or five other similar but larger clusters. The common fruit-stem or peduncle thereof was about three feet long, flattened and curved like a scythe. Its width was about two and a half to three inches, but not over half an inch in thickness. At its fruit-bearing extremity sprung some one hundred or more minor fruit stems or pedicels, all starting nearly but not quite together, the upper ones being three or four inches in their point of departure from the common stem above the lower, and covered by them. These stems bear many blossoms, most of which are abortive ; but from one to six or seven ripen upon each stem, but so many more at the top that the mass of the fruit is like a corymb. These minor fruit-stems are about a foot in length, four-sided, flattened, and very tough. The fruit is oval, as in the figure, which is less oblong than in many specimens, from an inch to an inch and a half long, by one-half to seven-eighths of an inch in its lesser diameter, growing sessile upon the pedicel, and with a small point at the apex. The fruits all seem to be stoneless. Although not fully





ripe, the fruit, the pedicels, and most of the large common peduncle, were of a rich golden yellow, (corn color.) There is a variety much more common in cultivation, which resembles this in every particular, except that the fruit and fruit-stems are all of a reddish brown. The unripe fruit is nearly as rough and astringent as the unripe Persimmon or American Date, but at maturity it softens and sweetens, and becomes a very agreeable fruit. Col. N. states, if I rightly understand, that the leaf-stalks of his trees are some ten feet long, and the leaf itself (lamina made up of many pinnæ) about ten or twelve feet in addition. There is a figure of a tree in Loudon's Encyclopedia of Plants, p. 829, No. 13,831, which we copy, as it gives an idea of the tree as grown at the East. The stones of the dried Dates of commerce, it is said, when planted grow freely. Loudon describes the Date as " a lofty palm with a rugged trunk, on account of the persisting vestiges of the decayed leaves. These leaves, when the tree is grown to a size for bearing fruit, are six or eight feet long, with pinnæ three feet long, and a little more than an inch broad. The flowers of both sexes come out in very long bunches from the trunk between the leaves, and are covered with a spatha,

which opens and withers ; those of the male have six short stamina, with narrow four-cornered anthers filled with farina. The female flowers have no stamina, but a roundish germ, which becomes an oval berry with a thick pulp, inclosing a hard oblong stone, with a deep furrow running longitudinally."—(*Encyclopedia of Plants.*) The Date tree is more hardy than the Orange, Col. Nightengale informs me.

[We thank Mr. White for bringing to the notice of our readers the interesting fact, that one variety at least of the Date Palm is hardy at the South. Accustomed as we have been to see an occasional specimen of diminutive growth in a collection of rare plants, his description, with its luxuriant leaves twelve feet in length, carries us back, in imagination, to the "sunny clime of the Olive and Palm," and we revel again amid the scenes of our youthful reading. If steam, in one sense, has annihilated distance, and brought remote countries close together, so, in another sense, has Horticulture; for we find the tropics almost at our doors. The fact stated by Mr. White is not alone interesting; it will have a special importance to those of our readers living at the South, the Date being a peculiarly wholesome fruit.—Ed.]

LANDSCAPE ADORNMENT.—No. VI.

BY GEO. E. WOODWARD,

Civil and Landscape Engineer, 29 Broadway, N. Y.

In all the various departments of Art, there exists much diversity of opinion in regard to true excellence; scarcely any two acknowledged authorities agree in what is truly artistic and beautiful, and the further we recede from the true artist, the greater the disposition is to condemn.

The range of excellence in high Art is a very extensive one, and to take any particular school of Art for a standard, and judge all else by it, is a folly often committed by those of limited information. There is in no Art a law that overrules any peculiarity of style, manner of expression, or of execution; peculiarities exist in every individual, and the higher we ascend the scale of merit, the more original and less imitative both design and execution will become.

We have before stated the possibility of adorning a landscape in very many different manners, neither of which shall have any thing in common with each other, and yet all shall fulfil every condition of high Art, and strictly accord with the principles of refined taste. A diversity of talent in a collection of works of Art is much to be desired; a gallery of pictures by one artist, or of one school of art—a city built by one architect, or in one style of architecture, will not, and can not, satisfy the general taste for variety. No matter how superior may be the taste and ability of the artist who designs and executes; by comparison, and not by repetition, the mind judges and appreciates, and forgets any sense of weariness. The employment of varied talent in any work of landscape embellishment, would be a somewhat novel feature, but would certainly yield far more satisfaction than the disposition to accept the whims of every would-be critic.

In Landscape treatment on an extended scale, such as public parks, rural cemeteries, etc., and more particularly in our own Central Park, which is designed to be a model of landscape adornment, we should like to see a system of execution carried out, that shall furnish an example of the different styles of all the acknowledged talent and ability that seek a name and fame in the pursuit of an Art so beautiful and attractive. We should prefer to see the execution of certain portions delegated to educated and skilful professors of the Art, and let them be alone responsible for its manner of planting, creation of effects, and arrangement of details, and which shall join harmoniously with all around it. The intention is, as we understand it, to introduce the excellences that exist in all the various schools of landscape adornment; but as the tendency of any one controlling mind is to run in a particular or peculiar direction, we shall see its impress in the execution of any and every mode that is adopted. To us the Central Park, like the Dusseldorf Gallery, is a school of study, and our wish would be to see displayed there all the talent in rural art and embellishment that money can command. The duration of human life is not sufficient for any one artist to finish the Central Park, and each successive one, in order to show how much smarter and more efficient he is than his predecessor, will condemn and remodel all that he dare to of what has gone before him, and we may therefore hope to see carried out, simultaneously, individual styles of landscape art, as to look for their certain development at intervals of years.

> "Insult not Nature with absurd expense,
> Nor spoil her simple charms by vain pretence;
> Weigh well the subject, be with caution bold,
> Profuse of genius, not profuse of gold."—*The Gardens.*

As exponents of two schools of landscape treatment, and as examples showing the manner in which pure taste may differ, compare the primeval beauties of "Idlewild," nature left alone, with the princely park at "Wodenethe," its exquisite finish and elegance, a lawn that knows no equal, and an arboretum unsurpassed in every thing that is rare and choice, and say which indicates the absence of truly artistic management.

A certain intuitive knowledge of construction, or the instinct of self-preservation and protection, is a gift implanted in many grades of the animal kingdom; each species has one form of construction, they build after one plan, and the progress of time makes no change nor adds any improvement whatever; they adhere to the original designs, have no different orders of architecture, no modern forms, no Gothic, no Italian, no Elizabethan, and no new American style; and while instinct alone directs one course, and one only, reason leads every man to adopt a different form from his neighbor, and to wage a war of criticism against all that does not fulfil the conditions that his experience, his imagination, or his supreme ignorance, has led him to believe to be correct.

We do not all see the same things through the same medium; impressions are not received alike; an acknowledged standard of taste is not a standard of taste to all men, and it is hardly reasonable to suppose there is a standard of education which will enable all men to think alike in matters of taste. The natural instinct of construction, and ignorance of all the progressive rules, established tastes, and collected excellences in that Art, and in the art of design, tempt men to become critics, and often to attempt the execu-

tion of works of art. The education, experience, and skill of the artist, the architect, the civil engineer, the landscape gardener, the draughtsman, etc., are thoroughly ignored, the short cuts of professional ability are cast aside, and the preference acknowledged, to sink money in spoiling the beautiful hints that nature has generously given, rather than for that assistance or advice which would enable him to complete her admirable designs.

The sad disappointments often resulting from first attempts in landscape gardening, so little satisfaction for a liberal expenditure, and so much said about the cost of rural improvements, instead of experiments, are but few of the arguments we might use to him who expects to unite economy with taste in the embellishment of a country home, without first making himself master of the art he proposes to practice.

[Mr. Woodward's suggestion in regard to the Central Park is a novel one. We undoubtedly have talent here of a high order in landscape adornment, and an experiment of this kind would naturally tend to develop its highest phases. We think it might be done in such a way as to harmonize all the parts into a beautiful and effective whole; but it would require a combination of the nicest judgment, taste, and skill. We must not, however, overlook the acknowledged advantages of having a master mind to preside over all great works. Mr. Woodward's suggestion evidently refers to that portion of the Park not yet laid out; but we fear that it comes too late to receive the serious attention of those having charge of the work.—Ed.]

VIRGIN LOAM—THE FORMATION OF SOIL.

BY WILLIAM BRIGHT, PHILADELPHIA.

The choicest production of nature for gardening purposes, is the simple natural loam of a fertile pasture, which has not been cultivated for many years. A thick old sod, with a bit of turfy loam, which has not been disturbed by the plow for a long time, contains the elements of a good soil, in a condition which can scarcely be imitated by the art of man. A grape border formed of such materials alone, finely broken up, is perhaps equal, at first, to any composition that can be made. Why is this? In what manner and by what agencies has nature elaborated in this natural soil the elements of plant-growth, the sources of such certain and perfect fertility? We have often heard these questions asked, but until recently have never heard or seen a philosophical solution of the problem. Gardeners generally look upon the thing as a great mystery, a secret past finding out. Geology, we think, penetrates the heart of this mystery, and reveals the secret in a most satisfactory manner.

Geology, investigating the nature of the various strata, rocks, and other component parts of the earth, has been compelled to examine carefully the processes by which soil is formed, and presents to us the astonishing but undeniable fact, that the most important agents in the formation of both rocks and soil have been *insects*, or *animalculæ*, a vast proportion of them too small to be distinguished by the naked eye. Some of the limestone rocks are almost entirely composed of the remains of cretaceous or shell-

covered animalculæ, of a size so minute that millions are condensed within the limits of a cubic inch. The creation of immense rocky reefs, hundreds of miles in extent, by the coral insect, is another instance of the part performed by minute creatures in the formation of the earth. The true *soil-makers* are also insects, and the chief of these is our old acquaintance, the *common earth-worm*, (*Lumbricus terrestris*,) or angle-worm, universally found in all good carbonaceous soils. This humble and seemingly useless creature is shown, by scientific research, to be the great natural *mould-maker*, or *loam-former*, of the entire earth. It is this poor, senseless worm which composts the elements of virgin loam and rich turfy sod, so much prized by all gardeners, which prepares, by mastication and digestion, as it were, the mineral and vegetable parts of the soil, the rocks and leaf-mould which form the basis of all soils, but which, without the agency of this worm, would lie separate, unmixed, and unfertile. How this is done, let us consider.

The ant and the earth-worm are called by geologists the pioneers of cultivation. As the honey-bee precedes the march of civilization towards the great forests, so the ant and the earth-worm precede the gardener in the cultivation of the soil. On a newly-made gravel walk, which is a good representation of a barren, rocky soil, the first insect which makes its appearance is the industrious little ant. These insects burrow into the sand, work it over and over, drop their excrement, die, and mingle their bodies with the ant-heaps, attract other insects, collect vegetable and animal matter, and thus organize the first elements of soil. Now coarse, rank grass starts around and among these ant-hills, and these primitive forms of vegetable life dying, create the food of new and higher classes of plants, which, again dying, year after year, soon deposit a layer of vegetable matter or leaf-mould upon the surface of the sand and gravel. After this comes in the earth-worm, and the richer the layer of vegetable matter, the sooner does the great soil-maker appear upon the scene. The earth-worm, it would seem, feeds not only upon vegetable matter, but upon sand and rotten rock, or at least in its travels up and down through the surface material of the earth it passes through its intestines not only vegetable fibre, but coarse particles of sand, and a great variety of rocky substances rich in mineral elements, which it mixes, ferments, and composts, and finally ejects, in the shape of excrementitious worm-casts, upon the surface of the earth, thus furnishing the materials of pure loam, in the most perfectly combined and most finely divided form; just that rich, but simple, pure, natural, mysterious "bit of virgin loam," which the experienced gardener, the world over, so ardently covets. Neither vegetable matter, nor mineral matter, unmixed, will create a fertile soil. Nor will merely mixing these substances together form a perfect loam. The rocks must be weather-worn, and decomposed by the action of air and water, by oxygen and carbonic acid. The vegetable fibre must decay and become converted into humus or pure mould. The earth-worm must feed upon these changing substances, and thus hasten the chemical changes, by its simple digestion, mixing and combining all in its poor maw, and finally ejecting its manurial treasures upon the surface of the earth, rich, carefully prepared, perfect plant-food, containing all the elements of fertility, united with a degree of skill beyond the art of the chemist or the gardener.

Here, then, is the great vegetable mould-maker, the great natural com-

post-former, a common earth-worm. It is said by scientific observers, that the earth-worm will create, by its excrement ejected in the shape of worm-casts, an inch in depth of mixed or perfect soil over the entire surface of a rich field within the short period of three years. But the labors of the worm do not end with the first formation of the soil; it is constantly at work, opening the subsoil, and admitting air and water through its burrows, and bringing up the rich mineral elements from below, well digested and divided, to restore the waste of cultivation. And it is this poor worm which when we rest our exhausted soil, in a measure renews the fertility of our fields, by its never-ceasing chemical and mechanical labors in sand and leaf-mould. The presence of the earth-worm, and its little heaps of masticated soil, in large numbers, may thus be taken as the evidences of a fertile loam; for the little mounds which the worm throws up from its burrows is the great natural fertilizer of the earth, before which the special fertilizers of man sink into comparative insignificance, as crude and ignorant compounds.

In view of these facts, the gardener will no longer look upon the earth-worm (as he has sometimes done) as a worthless and destructive creature, which eats up his good loam, but as his co-laborer in the cultivation of the earth, his superior as a compost-maker and sod-former, and the manufacturer of his much-prized virgin loam. Thus happily does science penetrate and explain the seeming mysteries of nature.

[A happy defence of one of the gardener's best friends. There is really nothing useless in the vast world of nature; nothing made in vain. In connection with this subject, we may mention that we have only to cover a piece of ground for a while with some boards to greatly increase its fertility: the reason of this is, that the boards afford a convenient shelter for the worms to work under, and the earth will be found full of their exuviæ. For the same reason, the soil under surface rocks is always more fertile than that surrounding them; and many similar cases will be suggested by Mr. Bright's article. We hope he will continue a subject he has so well begun.—Ed.]

THE DELAWARE GRAPE—REPLY TO MR. THOMSON.

BY WILLIAM R. PRINCE, FLUSHING, L. I.

I regret that my worthy friend, A. Thomson, Esq., of Delaware, Ohio, should feel aggrieved, as is indicated by his article in the Horticulturist of the present month, for assuredly it is without cause so far as himself is concerned. I am not aware of ever having made a remark *personally* disrespectful toward him; for, indeed, I do not consider him as sustaining as a fact the point I have assailed. It is true that the naming a *foreign vine*, or even a *native vine*, that had been brought there from New Jersey, the "*Delaware*" grape, was at least inappropriate, and calculated to impress the public with the belief that it originated there. But it seems quite probable that Mr. Thomson supposed it at first to be a native of that vicinity. I certainly derived such an impression from the early correspondence with him on the subject. He, however, afterwards stated that it had been traced to

New Jersey; and when I visited him, in September, 1859, on my stating to him that it was absolutely foreign, as I had done in repeated letters, (which he has not thought proper to quote,) he no longer claimed it to be a native, and I felt satisfied that he had become convinced to the contrary.

When visiting Delaware, I called first on Mr. T., and although he had a number of the vines of bearing size, and his small city garden seemed well sheltered, there was not one berry. He named but one person who had the Delaware in fruit, and we went to Mr. Campbell's, where I saw *but one vine*, although it may have had three shoots, (now called vines.) I visited Mr. Charles Sweetzer's garden, and found other grapes, but no Delawares, nor could I, on inquiry, hear of any other vine bearing fruit in the town. I was told that it was notorious that Joseph Heath, living just out of town, brought the first vine there from Bordentown.

In regard to my having expressed an opinion in 1855 that the "Delaware" was a native variety, the cause of the opinion then expressed has been so often explained, (and, as I had supposed, to Mr. T. himself,) that I do not consider an error arising from the acts of others, and long since corrected, can be fairly quoted against me. Mr. Thomson's correspondence, and the statements made at a fair I attended in Ohio, where "Delaware" grapes were exhibited, all led me to suppose it was *a native variety*. I received a package of layers from Mr. T., and on the same day a package of layers of the Ramsdell grape from another person. Neither parcel had any label by which they could be distinguished; and, in deciding their identity, the Ramsdell vines were marked Delaware, and planted with great care in my garden, with the name of "Thomson" attached to them, and the Delaware vines were marked Ramsdell, and sent to the nursery half a mile off. Watching the development of the supposed Delaware, (but in reality the Ramsdell,) and finding the large foliage of the *Labrusca*, I boldly stated to Mr. T. and some others that the Delaware was positively a native, and it was not until I made another purchase of Delaware vines that I discovered the error. Like others, I may be misled by a false issue, but I never change an opinion once formed, as I seek, when advancing it, to place it on an incontrovertible basis.

It will be recollected, when the "Rebecca" grape was announced with furor as a *genuine native, with foxy odor, &c.*, that I instantly pronounced it a Chasselas seedling; and now, all those who then so determinedly opposed me have acquiesced. I only ask five minutes' inspection by any person who will call upon me, to prove the "Delaware" to be a *Vitis vinifera*. In a future communication I will present the peculiar characteristics which distinguish the Vitis vinifera, and will point out those which prevent the successful vineyard culture of any of its varieties. I will also extract the opinions from numerous letters, proving *the utter failure of the "Delaware" in open field culture*. As to any special "self-interest" in the matter, I set such allegations at nought, as more profit can be made by conforming to a popular delusion, than by opposing it, even in the culture of grapes.

Having always viewed our country as preëminently stamped by God as "The Land of the Vine," I labored, in connection with my revered father, for fifteen years antecedent to 1835, to establish American vineyards with foreign vines. Nicholas Longworth, Dr. J. B. Garber, and a host of others, were engaged at that time most ardently in the same pursuit. And what was the result? All our hopes were blighted, and there is not even one who made those great and expensive experiments, but will now say that the greatest

curse that can befall the present renewal of the grape culture, would be the planting American vineyards with varieties of the Vitis vinifera. And is it not degrading to American intelligence, after all the experience of the past, to be still seeking out the puny and debilitated vines which France has been on the eve of rejecting for disease, when we can see every where implanted within our own boundaries, as the spontaneous gift of nature, ten distinct robust species of the grape, and varieties almost innumerable? Even the growth of seedlings from the foreign species ought to be repudiated, as the progeny has always proved feeble.

Yes! "Self-interest" I have in this matter, and that self-interest is a most ardent desire that we shall make no more ill-judged experiments, but that our future operations may be such as shall result in the glorious triumph of covering our hillsides and our valleys with prosperous vineyards, thereby not only furnishing to the whole nation that pure, gently exhilarating, and restorative beverage which constitutes one of the greatest boons God has bestowed on man, but which will also serve to eradicate the greatest vice of the nation. Intemperance is undeniably the most debasing parasite which afflicts humanity, and the grape culture is the sovereign and only means by which it can be eradicated. Man, in the performance of the ordinary duties of life, exhausts both the body and the mind, and then seeks some congenial restorative. Deprived of pure wine, he looks to alcohol, not from choice, but from necessity.

Is it not then the noblest pursuit in which we can engage, to develop the vineyard culture until every family in the nation can be cheaply supplied, and also until we can export the pure juice of the grape to every other country that requires it?

[However much cause Mr. Thomson may heretofore have had to except to Mr. Prince's allusions to himself, we think he will not complain of the tone of the present article. We are glad to see Mr. P. disclaim any personal ill-feeling; and we may add, that his reasons will have more force, because more temperate, but they are none the less decisive, as the reader will see. Many wanted to know the reason why Mr. Prince changed his opinion, and this will be the first time that most of them will have heard of it. We certainly have never heard of it before, to the best of our recollection, and never could account for the silence, but wished it might be broken. The impression has generally prevailed that Mr. Prince's opinion was originally based on an inspection of Mr. Thomson's vines, but his explanation puts another face on the matter. The subject is now in a way of being cleared up. Let us by all means have the other article, with your reasons for considering the Delaware a foreign grape: state the particulars in which the Delaware differs from the native vine, so that the points of comparison may be obvious. We agree with Mr. Prince, that no greater misfortune could befall the country than the planting of foreign vines for vineyard culture, and this is an additional reason for deciding speedily the origin and hardiness of the Delaware. We want all the testimony we can get on both sides of the question. Rev. Wm. P. Page was another of those who entered into the culture of the foreign vine at the time alluded to by Mr. Prince, and we have heard him state his losses at upwards of $20,000. We are all agreed that the foreign vine is not adapted to our climate: experience has settled that beyond dispute.—Ed.]

RUBUS LACINIATUS—"JAGGED-LEAVED BLACKBERRY."

BY WILLIAM LAWTON, OF NEW ROCHELLE, N. Y.

Having introduced a specimen of this fruit, together with the branches and leaves, at the late meeting of the American Pomological Society, held in Philadelphia, it may be proper to state what I know in relation to it. The origin of this plant appears to be unknown; it was found in the celebrated Botanic Garden at Berlin, and described by the German botanist Willdenow, in his enumeration of these plants, Berlin, 1811. In a catalogue of plants in the Jardin des Plants, Paris, 1802, four varieties appear, namely: *Rubus cæsius*, *R. fruticosus*, *R. scandens*, *R. saxatilis*. As it is not described in Miller's Botanical Dictionary, London, 1807, I conclude it was introduced into the Garden at Berlin subsequently to 1802; and it is very singular that the origin of a plant so beautiful, and with so many distinctive qualities, should be involved in obscurity, and the value and quality of its fruit remain almost unknown until the present time.

I find it in the catalogue of Wm. R. Prince, Flushing, 1844, as the "Parsley-leaved Blackberry—very curious," and in 1860, as "Parsley-leaved, or Late Prolific, large, sweet, aromatic flavor; ripens after Lawton; very productive, estimable, rare." To this description I would add, perfectly hardy, and does not cast its beautiful foliage until late in the winter. In Watson's "*Dendrologia Britannica*," London, 1825, a full botanical description may be found, with a colored plate of the plant and flower.

I am thus particular for the purpose of calling attention to this plant as a valuable addition to the amateur's fruit garden, and it may prove profitable to fruit-growers generally; but for the purpose of covering unsightly stone fences with beautiful foliage and sweet fruit, it will be invaluable. The berries are large, ripen nearly a month after the Lawton, and may be all gathered within two weeks; after which, as I have before stated, the trailing vines will retain their deep green foliage until winter. Mr. Thomas Hogg, of Yorkville, presented me with one dozen plants, which I put out in the open ground on 2d December, 1856; every plant survived the winter, and grew most rapidly the following season. In September, 1858, they produced a fine crop of fruit, and in the two succeeding years have been equally productive. In regard to the best method of cultivation, and some peculiarities of the plant, I may trouble you with another communication. The photograph I send to you may not be as perfect as you would require for your engraver, but from your knowledge of the fruit, and skill in delineation, I should hope you would be able to furnish it in your next number.

[The honor of introducing this Blackberry belongs to Mr. Charles Moré, of Yorkville, N. Y., who imported it from France in 1842. In 1843 he gave us three plants of it, the old stools of which are still in vigorous condition. In 1844 it appeared in Mr. Prince's Catalogue, and subsequently we sent it to some friends in Boston and elsewhere. Mr. Hogg got it at an early period from Mr. Moré, and Mr. Lawton, some years later, as stated above, received it from Mr. Hogg. Mr. Moré, in the mean time, had been propagating and selling it, and has continued to do so up to the present time, there always having been some demand for it. Mr. Munson, of Astoria, who made such a fine show of the fruit at the Farmer's Club this fall, procured his plants of Mr. Moré, and has propagated it largely, as has also Mr.



RUBUS LACINIATUS.

Hogg, Buchanan, Marx, etc. We first called public attention to it in Mr. Pardee's Strawberry Manual, published some years ago. The plant is quite ornamental, and deserves a place in the amateur's garden. It is well adapted for covering rock work and stone fences. When properly cultivated it yields a fair crop of fruit, juicy, very sweet, and of good flavor. It is a rampant grower, and if allowed to trail on the ground, will extend a distance of twenty feet or more. Its hooked thorns are a terror to all who approach it; we think nobody would attempt to scale a wall covered with it. Though its origin is not known, it is supposed to be a native of France. We shall be glad to have Mr. Lawton's article on its cultivation, to which we may probably add some suggestions of our own.—Ed.]

IOWA PRAIRIE SKETCHES, NO. VI.

BY "MINNIE."

I have just returned from a short walk, and while walking have been, as the preacher says, "looking for my text." I have examined but a small portion of one page of Nature's voluminous book, but oh, what gems of thought do I find written there! How shall I select any one of these, and describe its varied beauties? What hand, well skilled in art, can imitate, what pencil delineate these varied forms? What dyes can reproduce such rich hues as these? Or can Persian looms weave textures soft and curious as compose the petals and foliage of these plants? Nature, when thou dost work, all the race of man may look on and admire, and strive to imitate, but vain is the effort, impotent the skill, for thou, Nature, art but the pencil, the dye, the loom, the varied machinery by which *mind Supreme* paints, forms, creates for man, to lead his finite mind "through Nature up to Nature's God!"

Mr. Editor, could I but hold up before you and your many readers the promiscuous, hastily gathered, yet delicate and richly colored bouquet, which now lies before me, I might lay down my pen and say no more, for description is tame and dull, when the eye rests on the real object. But this I can not do; therefore I must classify, specify, describe, and when I have done, many will no doubt lay down the page and say, "Why here is but a little more, after all, than the common Golden Rod, Sun-flower, and Aster!" Well, the remark is true; for although the prairie is now thickly studded with floral gems, yet our autumnal flowers nearly all belong to the great natural order Compositæ, and the Genera Solidago, Helianthus, and Aster are the principal families to which these individuals belong.

But let us examine our bouquet a little. Here are nine species of the Aster tribe; take one of each, and arrange them in almost any careless manner that you may, then hold them back and look. Is there nothing here to admire? What say you to the soft, silky, pubescent foliage of the Aster sericeus, with its dark, slender, wire-like stem, supporting such a weight of bloom? to the A. multiflorus, with its masses of delicate, pearly-white flowrets, and its finely cut foliage? or to the A. Tradescanti, var. fragilis, with its graceful lilac-purple panicles? Is there no beauty in these? Compare with any one of them, the *most costly artificial* of the shops, for which you exchange your gold, and say, is the imitation any thing like as perfect, in form, outline, or coloring, as this which has sprung from the earth, and been

nourished by sunshine and shower? Nay, nothing like it, you on comparison admit. Ay, in the Aster family alone there are beauty and grace inimitable!

Let us look further. Of the Golden Rod, (Solidago.) I have four species, viz.: S. altissima, S. rigida, and S. Missouriensis, with their golden crests and nodding plumes, and the S. serotina, with fine, soft, dark colored leaves contrasting finely with its pale yellow umbel. Arrange them with several other species of the Solidago, according to their height, &c., in contrast with some dark foliaged evergreen in your grounds, and there, carefully nurtured, let them thrive and bloom, and in the autumn of a future year, tell me if you would willingly see them removed from your selected nook, to "bloom unseen" again on the broad wild prairie. Here is a Helianthus, with tall stalks and many branches full of bright yellow sun-flowers, which contributes its share of show and brightness to the autumn landscape.

Two of the Liatris family are also here, Liatris scariosa, most beautiful in the *bud*, and L. spicata, with its tall slender spike of bright violet purple flowers; and two of this family, L. pycnostachya, and the cylindrica, less stately than the former, but not less beautiful, have bloomed and perished with the summer days. The Liatris is, I believe, almost wholly *western*, but not unworthy a place in the cultivated grounds of eastern connoisseurs.

I have a thistle too, Cirsium Virginianum, the only species of thistle I have observed in Iowa, and from what I have seen of its habits, I do not suppose it is a very troublesome enemy to the agriculturist.

A few flowers not syngenesious are also here. The Lobelia siphylitica, "blue as an Italian sky," shaded and penciled with pearly white, with half-parted lips seems to say, Would you not like to have me live beside the little stream which flows from your fountain, and rippling through your grove, hides itself among the roots which drink its water? And there, by my side, I am sure my more showy sister, L. cardinalis, with her scarlet robe, would be a welcome guest, and oft attract your admiration.

Other beauties, Gentiana pneumonanthe, "deeply, darkly blue," and a variety of the same, rubricaulis, together with a pale cream-colored blossom of the labiates, (a stranger to which neither Eaton nor Wright, Wood nor Gray, has yet introduced me,) with a branch of seed pods of the Baptisia, completes the list of this wild garland.

How kind the hand which scatters so profusely all over this unbroken soil, such beautiful tokens of his loving care, thereby cheering and enlivening the hearts of the lonely settler's family for long years, in which he labors to inclose his land, tills, and builds, and provides food and comfort for his loved ones, before he could dare indulge in the luxury of a well-cultivated flower garden, greenhouse, &c., and for which—did not these fairies of spontaneous growth come in to fill the vacancy—the more refined portion, and especially the little ones, would look back with yearning hearts to the eastern homes they have, from various causes, been led to leave, and long for them as did the wandering Israelites for the flesh pots of Egypt.

REPORT OF THE CINCINNATI COMMITTEE ON GRAPES.

Just as we are finishing up our last form, the following report comes to hand from Mr. Mottier, who will please accept our thanks. It is a valuable document, coming from three of the most experienced vine-growers at the West, and will be read with deep interest. In view of the large sums which

are being yearly expended in the purchase of Delaware vines, it is a matter of the first importance that its character and hardiness should be speedily and definitively settled. We are desirous of having all reliable testimony on both sides of this question, so that it may be put beyond all reasonable dispute; we think it is already so. We have given our own opinion on this point, with the results of testimony collected from various sections of the country. The following is explicit, and to the point.

To the President of the Cincinnati Horticultural Society:

Sir:—The committee who were appointed to take into consideration the cultivation and general treatment of grapes suited to our locality, and to ascertain what is the most advantageous variety for our use, submit the following report. The growing interest taken in the cultivation of hardy grapes for wine and table use, seems to your committee to call for better and more systematic treatment for our vineyards than we have generally found them to have received.

A very erroneous system of pruning is generally practised; that is, too short summer pruning, or breaking the shoot off at one leaf after the last bunch of grapes, instead of leaving three or four leaves to nourish the grapes, and keep them in good growing and healthy condition. The result of this short pruning is, that a part of the grapes never ripen, from a deficiency of foliage; for if the vines are stopped too short, not only does this cause a deficiency of leaves, but it hastens the maturity of the wood, and thereby causes the falling of the leaves before the maturity of the fruit. After the leaves are off, the fruit makes no further improvement or ripening.

It is the opinion of your committee that grapes will undoubtedly pay better even than any other fruit or crops, if they receive good and proper cultivation; at least, we have found it so in our own practice, from an experience of thirty years.

In our visits we have found one vineyard which was managed in a manner deserving of high commendation. The same system of tying and summer pruning was practised in it as that which has been observed in the vineyard of the chairman of your committee. The results are such as to give unmingled satisfaction. In our visits we also found some promising new varieties of grapes. The Norton's Virginia Seedling, a dark-colored grape for red wine, is highly spoken of; but the Delaware stands at the head of all the hardy grapes, either for wine or the table. We have been watching the Delaware for three or four years very closely, and find that the vines stand the winter freezing and spring frosts better than the Catawba, equally exposed and unprotected. No rot or mildew has yet been discovered, and no falling of the leaves until the fruit is fully ripe; and it ripens fully three weeks earlier than the Catawba.

We have seven reasons why we place the Delaware at the head of the hardy grapes:

1st. Superior quality for table use. 2d. It produces finer and richer wine. 3d. The vine stands the winter freezing better than the Catawba. 4th. It stands the spring frosts better. 5th. The grapes never rot. 6th. No falling of the leaves until the grape is ripe. 7th. The certainty of their growing, and the general hardiness and healthiness of the vine.

The chairman of this committee has already planted twelve hundred Delaware vines with such success that he is preparing the ground for twelve hundred more in the spring. Dr. S. Mosher, R. Buchanan. J. E. Mottier, *Ch'n.*

EDITOR'S TABLE.

To Contributors and others.

Communications, Letters, Catalogues, Periodicals, &c., intended for the perusal of the Editor, and packages by Express, should be directed to the care of C. M. Saxton, 25 Park Row, New York. Exchanges should be addressed to "THE HORTICULTURIST."

A WORD TO OUR READERS.—This is the last number of the present volume, and it becomes necessary for our readers to renew their subscriptions; and we trust they will all do so, and send us some new names with their own. We have endeavored, in an humble way, to make the HORTICULTURIST a useful and practical publication, and we have been cheered by many kind and friendly words of encouragement. We shall endeavor to add greatly to its usefulness during the next year; an increased subscription list would enable our publishers to place increased facilities at our command, and we should make the best use of these for the benefit of our readers, who, in reality, would reap the chief benefits of such increase. We desire that the HORTICULTURIST should work its way and sustain itself on its own merits; but much as we wish to extend our circulation, we do not ask any body to stop another to take ours; for we believe that the poorest gardener would consult a wise economy by subscribing for and faithfully reading two or three of the best. We believe, further, that gentlemen employing gardeners would promote their own pecuniary interests and the welfare of their gardeners by presenting them with an annual subscription to two or three good magazines. While we have reason to be satisfied with the year that is past, we look forward to a "better time coming."

YALE AGRICULTURAL LECTURES.—It will be remembered with how much interest and satisfaction the Lectures at Yale College were received last winter. The beneficial results that they were universally acknowledged to have accomplished, has determined their continuance, and we bespeak for them the attention of our readers. We are indebted to the politeness of Professor Porter, one of the moving spirits in the enterprise, for being enabled thus early to state, that the Second Course will commence February 5th, 1861, and be continued throughout the month. These lectures are given under the auspices of the Yale Scientific School, a scientific department of Yale College, as a supplement to its newly instituted course of practical collegiate education. A new and important feature of this course will be the complete illustration of all the subjects presented, by specimens, drawings, models, and living animals. Life-sized paintings of groups from celebrated herds will be included in these illustrations. The lectures on the training and breaking of horses will be accompanied by practical exhibitions. The lecturers of last year will take part in this course, and other eminent names will be added to the list. Among other new subjects, the diseases of animals will be presented by a leading authority. The relation of various branches of Science to Agriculture will be discussed by Professors in the Scientific Department of Yale College. These lectures are repeated with no expectation of pecuniary return, but from a desire to furnish facilities of education to those who

are unable to avail themselves of the more extended practical courses of the Scientific School. Its large expenses will be met in part by voluntary contribution. For further information apply to Professor John A. Porter, Yale College, New Haven, Conn.

ROSE CHAMPION GERANIUM.—We have learned that Mr. Isaac Buchanan, of New York, has purchased the stock of this fine geranium, figured in our September number, and it will, of course, be sent out, as it should be.

FARFUGIUM GRANDE.—Much the largest and finest specimen of this ornamental-leaved plant that we have yet seen is in the grounds of Mr. Saxton at Orange. The leaves are some six inches in diameter, beautifully spotted with pale yellow. It has three very stout flower-stalks, but the flowers are destitute of beauty. It will be a very popular plant, if it proves to be quite hardy. Mr. Saxton purposed lifting it, but we have advised him to let it remain where it is, in order further to test its hardiness.

FIRE AT THE MESSRS. PARSONS.—We have learned, with deep regret, that the large propagating house of the Messrs. Parsons has been destroyed by fire, entailing the loss of a great many rare and costly plants, including most of their recent importations. Their loss is estimated at $5,000.

IONA ISLAND.—We recently paid a visit to this beautiful spot, and were kindly entertained by its genial and hospitable host and hostess. In our "Chapter of Visits" will be found some extended remarks of a former visit. We are more than ever impressed with Dr. Grant's immense facilities for the propagation of the grape: there is no other place to compare with it in this respect. *Fifty thousand* vines in pots, besides some *twenty thousand* in the ground, will give the reader some idea of what is done in the course of a single year, these all having been propagated during the past season; and they are remarkably fine, too. But one of our objects was to examine by request, the doctor's seedlings. Seven of these we found to be good enough to put on the "promising" list; and two of the seven were so decidedly superior and distinct that we put extra marks on them; there is no danger of confounding them with any grape at present cultivated. The names we gave them we withhold for the present. One other, of very early maturity, we think will take its place as the best of its class. We advised the doctor, however, to give them all a further trial, and not to risk his well-earned reputation on an uncertainty. Being a sensible man, he will, no doubt, follow such sensible advice. We shall not be surprised, however, if, one of these days, there issues from this classic-named island, the best native grape that has yet been given to the American public.

CORRECTIONS.—On p. 475, 8th line from the bottom, place a *period* after "developed," and a *comma* after "said."——In our article on the "New Grapes," we stated that we received one from Mr. Paxton. This gentleman brought us the grape, but it was from Mr. Merceron, which we did not understand at the time.——In "Fruit Received," the fine bunches of Isabellas, Catawbas, and Concords were from Mr. Moss, of Mossville, instead of Mr. Howard. The latter gentleman ought to have received a letter from us instead of a notice; but our cards got mixed, and both went wrong.——In Mr. Daniels' article on Parks, Hyde Park and Quatremère are spelled wrong; and there are one or two other errors in the same form, which went to press without being seen by us.

CENTRAL PARK.—Mr. Green will please accept our thanks for the "Third Annual Report of the Commissioners of the Central Park. 1860." We are now in the midst of its perusal.

OMISSIONS.—We are still compelled to omit Horticultural Societies, some Correspondence, &c., for want of room. Our printer is pretty ingenious, and can do some queer things, but he declares he can only get a certain amount of matter in each number, and we have to submit.

THE MINNESOTA FARMER AND GARDENER.—This is a new paper just started at St. Paul, and edited by Messrs. L. M. Ford and J. H. Stevens. It is a folio of eight pages, and published at $1 per annum. The first number gives promise of a practical and earnest paper, and we wish it abundant success.

THE NEW ENGLANDER.—The November number of this excellent quarterly contains an article, entitled "Hints about Farming," by Donald Mitchell, Esq. To say that it is in his best vein, is to say enough of it as a piece of composition. His views in the main are sound and comprehensive. On some points we differ from him, and to others we should give much greater prominence than he does. His chief point, however, that mere science, without experience and business capacity, is of little value, is one upon which too much stress can not be laid. The article deserves to be attentively read. We shall copy portions of it hereafter.

The subjects of his discourse are, the "Yale College Lectures" and "Our Farm of Four Acres;" but he does not seem to be aware that the latter has been republished here, and several thousand copies of it sold. The New Englander is published at New Haven, and edited by W. L. Kingsley.

FLOOR SKATES.—Having our attention arrested by some curious looking objects in a window in Broadway, we stepped in to examine them. They proved to be "Floor Skates," invented by Mr. Shaler. The engraving in our advertising columns gives a good idea of them. They are fitted with flexible rollers made of gutta percha, and may be run on a naked floor, or even a carpet or oil cloth. Mr. Vail, the agent, took us into the "skating room," where we saw a number of boys enjoying themselves greatly, gliding about with as much ease and facility as if they were on a pond of ice, cutting spread-eagles, back strokes, &c. These skates are a great help to those learning to skate, and to young ladies and children they afford the means of an exhilarating and healthful exercise at all times. We have a high opinion of their utility, and commend them to notice.

DEATH OF MR. GEO. C. THORBURN.—We have just received intelligence of the sudden death of Mr. Thorburn, but too late to learn the particulars for the present number. We shall give them in our next. The announcement of the death of one so universally beloved will send a pang to many a heart.

THE DAIRY FARMER.—This is another new monthly, and its name well explains its object. It is published monthly at Little Falls, Herkimer Co., N. Y., by Mr. A. W. Eaton. Price, 50 cents a year.

BALTIMORE PARK.—We have a copy of the proceedings which took place at the inauguration of the Baltimore Park, from which we shall hereafter make extracts. Our Baltimore friends have been fortunate in securing the services of Mr. Howard Daniels as Landscape Gardener. He has talent, and we have no doubt that in due time he will present the Baltimoreans a "thing of beauty."

AQUARIA.—Mr. Davis, of Fulton street, New York, probably having an inkling of our piscatorial propensities, has sent us a very beautiful aquarium, well stocked with fish and *tadpoles*. It is very tastefully made, and we are much pleased with it. An aquarium is a beautiful and instructive object, and should be in every house where there are children—no matter what their growth.

THE CUYAHOGA GRAPE.—We stated last month that we expected matured specimens of this grape. They came duly to hand, and even exceeded the expectations we had formed of it from the first sample received, which was not fully ripe. We have had a fine drawing made, which we expected to give in the present number as a wood cut, but have concluded to keep it for a *frontispiece* for our January number. We only say for the present that it will, in our opinion, take its place among our best native grapes, and our friends need have no hesitation in adding it to their list. It is an unmistakably fine grape.

THE EUREKA GRAPE.—A committee have in hand Mr. Prince's Eureka grape, and will report upon it in due time. We have seen it, but do not wish to anticipate the report of the Committee.

SEWING MACHINES.—We have one of Weed's patent (a new one) under examination, and purpose soon to go over this ground for the benefit of our readers. Horticulturists are as much entitled to labor-saving machinery as any body else.

MORE ABOUT BOILERS.—*Mr. Editor*,—My attention has just been called to an article in the July number of the HORTICULTURIST, with the above heading, in which the heating apparatus put in for me by Wethered & Cherevoy is so accurately described by your correspondent "B." that I am satisfied beyond doubt that my place is referred to, as there is nothing else in Brooklyn approaching his description. The writer "B." goes on to say, that, though my greenhouses are so loosely built as to do injustice to any mode of heating, (they are substantially built of brick, and nearly new,) yet, nevertheless, the heating arrangements of W. & C. were so satisfactory that I "kept up a *high* temperature in times that tried men's souls," and that I "said" that when I had trimmed my lamp at night, I had no occasion to look out again till morning. I wish I could endorse this gratuitous "saying" of "B." But the facts are, Mr. Editor, that I was compelled to stay up nightly until midnight in cold weather, while my man had to be on hand at 5 in the morning to keep my plants from freezing, the thermometer being often in one house at 38°, and in the other at 42°.

The gentleman "B." also states the exact quantity of coal burned by me—"eight tons"—from November to May. Another gratuitous assertion, put in to keep up consistency in his "story." How he or any one else could know the exact quantity would be difficult to imagine, as there were three other fires supplied from the same pile. *My* impression was, that we burned nearly double that quantity; but possibly "B." knows better.

Now, Mr. Editor, the article in question was supplied by your correspondent "B." in response to a call from another correspondent for "facts and figures." What liberties he has taken with the "facts and figures" of the heating apparatus of my place, the above correct statement of the case will show, which, should he attempt to question, let him sign his name, and your readers can then judge between him and

JAMES H. PARK, Florist, Brooklyn, L. I.

[Very good, James, and outspoken enough; but it only makes the case worse for you, for it is manifest, on your own showing, that you have not read (and probably not seen) the HORTICULTURIST from July to the 6th of November inclusive! No wonder you burn sixteen tons of coal, and have to sit up till midnight freezing at that. You know that we have always been your good friend, but it serves you right, James; and we fear we shall not pity you if Jack Frost teases the life out of you the coming winter—unless you read the HORTICULTURIST, in which case we can promise you sound and refreshing sleep, at least so far as your greenhouses are concerned. Never again let any body "call your attention" to what is said in these pages, but resolve from this moment that you will know all for yourself. But this between ourselves. Now, "B.," what have you to say in response to Mr. Park's "facts and figures," which seem seriously to impeach yours, unless he is on the wrong track?—ED.]

CATALOGUES, &c., RECEIVED.

Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, Vines, and Roses, cultivated and for sale at the Commercial Garden and Nursery of Parsons & Co., Flushing, L. I., near New York.—One of the best classified catalogues we have seen, with quite a number of novelties.

Price List of Fruit Trees, Grape Vines, Flowering Shrubs, &c., Philipsburgh Nursery, Warren County, N. J. Charles Davis, Jr., Proprietor.

Catalogue of Foreign and Native Grape Vines, for Gardens, Graperies, and Vineyards. Autumn of 1860 and Spring of 1861. Wm. R. Prince & Co., Linnæan Botanic Gardens and Nurseries, Flushing, near New York. Forty-fifth edition.—In this new edition Mr. Prince has classified grapes under three heads, viz.: Foreign Grapes, American Indigenous Grapes, and American Hybrids and Seedlings of Foreign Varieties.

Descriptive Catalogue of Vines, &c., cultivated and for sale by D. S. Heffron, Utica, N. Y. —A fine collection, embracing all Dr. Grant's.

Wholesale Catalogue of the Brooklyn Nurseries, Brooklyn, L. I. Andrew S. Fuller, Superintendent, (Agent for Dr. Grant.)—Select, choice, and reasonable.

Descriptive Catalogue of a Selection of Roses, cultivated and for sale by John Saul, Washington, D. C., Nurseryman, Seed-grower, and Importer.—A choice collection of these beautiful objects.

Wholesale Catalogue of Fruit, Evergreen, and Ornamental Trees, Shrubs, Stocks, Roses, Bulbs, &c., for the Autumn of 1860 and Spring of 1861, offered for sale by John Saul, Washington, D. C.

Supplement to the Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, Seedlings, Roses, Camellias, cultivated at André Leroy's Nurseries, near the Railroad Station at Angers, France.—Embraces an immense collection of roses. The agents in New York are Messrs. Bruquière and Shebaud, 51 Cedar street.

Wholesale Catalogue of Parsons & Co., Flushing, near New York, for the Autumn of 1860.—Especially noteworthy in the ornamental department.

Annual Catalogue of Trees, cultivated at Gloaming Nursery, 1859 and 1860, Clarksville, Habersham County, Ga., by Jarvis Van Buren.

Cattle Disease. Report of the Commissioner to the Governor of Illinois.—A very interesting report by Mr. McFarland, embracing many interesting particulars of the Cattle Disease, brought to light by the Committee at Boston.

Descriptive Catalogue of Fruit and Ornamental Trees and Plants, cultivated and for sale by Carew Sanders & Co., at the St. Louis Nurseries, situated on the Olive Street Road, five miles west of the Court-House, St. Louis, Mo.—A very good miscellaneous collection of fruits and plants.

Select Descriptive Catalogue of Fruit and Ornamental Trees, Shrubs, Roses, &c., cultivated at the Kentucky Nurseries, Maysville, Ky. George G. Curtis & Co., Proprietors.—Full of choice things: the descriptions are particularly good.

The Pioneer and Monthly Record, devoted to the Industrial Interests, the True, the Beautiful, and the Good. September, 1860. No. 1.—This is intended as the organ of the Rensselaer County Agricultural and Manufacturers' Society, one of the most useful institutions in the country. The present number is filled with useful matter, and gives promise of doing much good.

The Illustrated Annual Register of Rural Affairs and Cultivator Almanac, for the Year 1861, &c. By J. J. Thomas, Author of "American Fruit Culturist," &c., &c.—This little annual has become almost indispensable. The present is one of the best yet published. It is well printed, handsomely illustrated, and full of just such matter as is most needed by all engaged in rural affairs. It is published in Albany by Luther Tucker & Son, 397 Broadway, and in New York by Saxton & Barker, 25 Park Row. Price 25 cents.

FRUIT GROWERS' SOCIETY OF WESTERN NEW YORK.

(*Report concluded from p. 552.*)

J. C. Maxwell, of Ontario County, spoke of his own cultivation being upon a rather heavy soil, and he had found the trees to grow well, and so does the fruit. Agreed with Mr. Barry;

and did not think the same opinions could be better expressed than had been done by Mr. Barry.

F. W. LAY, of Monroe County, has an orchard of three-year-old trees, which he planted where the long rows of trees ran through mixed soils, and much varied in running from one soil to another. Desired to add Belle Lucrative to the sorts valuable on quince. Bartlett succeeds well wherever well cultivated. Flemish Beauty also.

Mr. MOODY spoke of the comparative liability of standards to suffer from blight; but he thought them not so liable to blight upon light soils. Upon my place in Niagara County, have never seen a standard tree with fire-blight, nor have I ever had a cracked Vergouleuse. As to Mr. Barry's soil, I would not call that a very light soil; it is a mixture, a part of which sticks to the boots of those walking through it after a heavy rain: should call it a clayey loam. My standard Vergouleuse, which have been so successful on my loose, porous soil, are now over ten years old, and have been bearing fine crops for five or six years. In our county it cracks badly upon a heavy soil with hard and retentive subsoil, not underdrained.

Mr. LANGWORTHY thought, that in the cultivation of pears for profit it is desirable for the varieties to have a succession of ripening periods, which should not interfere with each other, nor with peaches. They would then be profitable; and, not being in competition with each other, nor with other fruits, would bring good prices in the market. On my soil, before described, Vergouleuse does not either crack its fruit or blight the trees; have not one case of tree blight.

GEO. ELLWANGER, of Monroe County, says that the Vergouleuse fruit has never been as large in our grounds as this year, both upon standard trees and on dwarf trees. The fruit, however, is larger upon standards trained as pyramids than on dwarfs. Considers it more liable to crack upon a very light soil, than where they have a heavy, clayey subsoil.

JOSEPH HARRIS, Esq, had, in a late visit to Wayne County, seen, at Newark, an orchard of ten thousand dwarf pear-trees and two thousand standards. It stood upon a side hill, sandy at top with clay subsoil; lower down the soils were more mixed, and became a heavy loam. Vergouleuse there cracked badly; worse upon the sandy than upon the heavier soil. The dwarf trees were double-worked, and Louise Bonne is fine, Bartlett very fine, and Flemish Beauty splendid. The farmer, seeing that there were considerable spaces between the trees, which were not crowded with vegetation, tried the experiment of growing a crop of rye in the orchard; and although he plowed it under as a green crop, it seemed to make the Vergouleuse worse, and to add one more to the many proofs that we can not grow two crops on the same ground, and must not cultivate any other crop in our orchards if we want the very best fruit.

B. L. HOAG, of Niagara County.—Have looked carefully at this matter of the Vergouleuse; and from all that I have seen should say, that it cracks less in light than in heavy soils. Knew one orchard of standards, planted in a clayey soil, which, although easily drained, had produced hardly a perfect specimen in the whole orchard. In a location not fifty rods distant, upon soil a little heavier, this fruit was badly spotted; while upo a sandy portion of this same orchard, it was not cracked at all. The dwarf Vergouleuse did not spot as badly as the standards. Would confirm what Mr. Lay has said. Belle Lucrative is a most splendid pear. What Mr. Barry says, as to good cultivation, but not too rich soil, is exactly my experience. Once saw a man who wanted to have his trees grow finely, put a wagon-load of manure around each tree, enough to kill any tree, and then complain that dwarf pear-trees would not succeed well with him.

Mr. BARRY here again remarked, in regard to the differences in soils, his land is a sandy loam, and the variations in the different parts of the plantation are, where the clay or the sand predominates. Sandy soils are very fertile; but the pear will not hold out in them for more than eight or ten years. The pear needs a good loam.

It is not safe to draw conclusions from one or two cases as to the causes of Vergouleuse cracking or spotting. Two years ago, the only place where it was found was the heavy soil. Thinks the spotting upon the fruit is a fungous growth, depending upon atmospheric causes. Last year

our Vergouleuse did not crack at all, but spotted badly. These spots developed their fungous growth in the barrels, while on the way to market; and the fruit was worthless on reaching its destination.

The Vergouleuse is fairer because of its ripening at a time when few competing fruits are in market, and there is a great demand for fine specimens.

Mr. ELLWANGER spoke of Stevens's Genesee Pear as being this year extremely fine; stating that for market no variety will bring a higher price, when well grown and well ripened. It is a truly beautiful fruit, although its flavor is perhaps not quite so fine as the Bartlett. Spoke of the Vicar of Winkfield as being variable in the character of the fruit, according to the seasons. It has one desirability, that of durability upon the quince stock, keeping up its vigor well. Our trees twelve to fifteen years old, bear annually very fine crops. The American Pomological Society, which had previously placed the Vicar on the rejected list because it rotted at the core before ripe, has this year taken it from that list.

Mr. HOAG spoke of Stevens's Genesee as having done very well indeed this season. The fruit seemed sometimes a little variable; but that was because of the too late picking. It should be picked early, as soon as it gives indications of a change in color.

GRAPES.—Which among the new hardy varieties have proved to be adapted to our climate?

P. BARRY thought more highly of the Delaware this year than ever before. In favorable situations and under good treatment, it is very fruitful. It is not hard of cultivation; and it is a fine, truly hardy, open air grape. We had one vine on the east end of our house, where justice was not done to it, as to soil, and yet it has made a very fine growth. The vine is only three years old; and yet it has borne quite a large crop this year upon the old wood. The shoots of this year are long, strong, and well ripened. In our open vineyard, the wood has not yet (Sept. 25) ripened up as well. Requires good treatment to ripen up the wood well; but when well ripened, nothing can be finer. Our Delaware fruit was ripe enough to eat two weeks ago. Has also cultivated the Hartford Prolific to a considerable extent, and is quite well pleased with it. The bunches have been generally complained of as very loose; but with us they are reasonably compact, and the berries are sweet and good. It is much better in our grounds than I have seen it elsewhere; seeming to be a vigorous vine, a strong grower, with most luxuriant foliage, and well deserving its name of Prolific. With us it grows tied up to stakes, upon the south side of one of our hills, and in the basin at the bottom, where the wash from the hills has made the soil rich and nice.

The *Concord*, also, with Mr. Barry, ripens perfectly every year, and under all exposures is a very hardy vine. On stakes in our open vineyard, the fruit is getting quite ripe, far riper than the Isabella.

The *Diana*, with Mr. Barry, is one of our most valuable grapes. When young, the vine is a healthy, strong, and a thrifty grower; and it bears fruit well when it acquires age. The Diana is certainly a variety which we can always rely upon here, under ordinarily good treatment.

The *Rebecca* has commonly been called a delicate grape, except under particular treatment; for instance, trained upon a wall. In my opinion, no American grape equals it in high flavor; although the bunches are small. Although not a grape for a northern vineyard—not for extensive cultivation in this latitude—it will be found a very valuable garden grape.

H. E. HOOKER, of Monroe County.—Rebecca with me has not grown well enough. It does not make very strong wood upon my place; and the foliage sunburns. Am cultivating the Delaware, both upon an open trellis and trained upon the south side of a building. Have found very few days' difference between the Hartford Prolific and the Delaware as to the time of ripening. Hartford Prolific is not nearly as good a grape as the Delaware; yet in size of the fruit and vigor of growth, I esteem it highly. While there are few gardens which have grapes as early as people desire, this sort is sure to ripen, and to be as good as the Isabella at a time when the Isabella

is not yet colored. Hartford Prolific is an earlier grape than the Concord; and so is the Delaware an earlier variety. I think that this Delaware is our very best grape. I have uniformly found it very productive. With fair culture it fruits well, and is a fine, sizable grape; while for home use the Delaware is, beyond comparison, better than the Concord.

Concord and Diana, with me, ripen up their fruit together; and this Diana is a fine, sweet, showy grape, and uniformly hardy.

As to which among the new hardy grapes I would recommend, I say Hartford Prolific, Concord, Diana, and above all the Delaware. The Delaware with me is entirely and perfectly hardy: even the lateral shoots are hardy; and no part of a well cultivated vine is ever killed back. For training on a trellis, I would recommend planting the Delaware; would advise every man who owns a square yard of ground to plant a Delaware grape-vine; because the taste for Delaware would excite a demand for the delicious fruit, and get great prices. I mentioned the Hartford Prolific because it is our earliest good grape, and gets used up quick.

Mr. CRAINE, of Niagara County, had two Delaware grape-vines planted out in his grounds, one against the east end of his house, and the other trained upon an open trellis; thus having an exposure the same as vines in a vineyard. The third year, has a good growth of wood, and we have seventy-five fine clusters of most delicious fruit, which ripened up early and well. Should not hesitate a single moment in planting the Delaware upon a larger scale than any other grape. Have cultivated the Hartford Prolific grape for four or five years, and can most fully indorse what Mr. Barry has said. It certainly ripens four weeks earlier than Isabella, and sometimes more. On 1st September, nearly a month ago, it was as ripe as Isabella usually is on 10th October. Allowed his Rebecca vines to remain all winter tied to a stake, as grown in summer; and this spring found that even the terminal bud was sound, so sound that we used the last bud for propagation.

Mr. HOOKER remarked that it was the roots of the Rebecca, and not the tops, which suffered from winter sometimes; and it required a little extra covering or protection to the roots to keep them from the effects of frost in the ground. The wood of Rebecca vine is always hardy as to the frosts of winter; but the summer's sun is apt to burn the leaves. As to Delaware, Mr. Hooker had noticed, when last at the Hudson River, a short time ago, that those who had had the most experience as to the merits of the Delaware, were now preparing to plant this variety very extensively. One man will plant out 2,500 or 3,000 Delaware vines immediately, confidently believing them to be the most profitable grape that he can grow for the New York market. Delaware is certainly an uncommonly productive grape.

Mr. LANGWORTHY here rose, and remarked that in his neighborhood Delaware is obtaining great notoriety. Some planters think they must have all Delaware to set out; and it is truly a most delicious grape.

Mr. HOOKER continued—Don't for market grow all of one sort of grapes, nor all one kind of pears, nor all one kind of peaches. By all means grow a variety of fruits. Every planter wants Delaware; and he wants Concord as well. He wants the very earliest fruit; and he wants the Diana as well, which is early, and ripens surely, but not quite so early as Hartford Prolific.

Mr. ELLWANGER—There is one thing in the Delaware that must not be overlooked, and which is very much in its favor: if not wanted for eating, nor for market, it will make a good wine; and it always ripens.

Mr. MOODY said, that the grape was the fruit of all fruits, which entered into most general consumption; but its greatest use, in my opinion, in this country is for wine. We want a grape that will make wine. We buy an immense quantity of wine, or of what is called wine, from abroad. Some people are particular as to what they drink, but nobody that I have ever seen, has been so conscientious that he wouldn't drink good native wine. We want a grape sweet enough to make wine without the addition of any sugar to the juice; and having found such a

grape, we can not raise too many of them in this country. Diana, also, will beyond doubt make a fine wine; for it is sweet. There is not any of that fibre which is in the most of our native grapes, and which when pressed is very sour, and needs sugar. In my opinion Diana and Delaware are the only two grapes which will here make a really fine wine. They are strong growers, with short-jointed wood, which ripens perfectly; they are early and abundant bearers; and their fruit will hang upon the vines for a long time after ripening. The frost does not injure the fruit, when fully ripe.

Mr. ELLWANGER here spoke of the Delaware as sure to ripen about the middle of September; and that then it could be left to hang upon the vine until the middle of October, if not needed sooner. In Europe, the vintners leave the grapes to hang as long as possible; and the longer they hang, the more saccharine matter they have in them. As to the quality of early ripening, the earlier the grape matures, the more you can depend upon it, provided it will hang upon the bunch well, and then you are perfectly sure of having your grapes ripened.

Mr. LANGWORTHY also said that Mr. Moody was on the right track in his strong commendations of the Diana and the Delaware grapes. They are certainly good enough for the eating of any fruit-lover; and then, when not needed for consumption upon the table, they possess the very important attribute of making a wine which is a good wine, a fine-flavored, palatable wine, and a wine sweet enough without any sugar.

Mr. BARRY had drunk Delaware wine in Cincinnati; and he could confidently say that it was the best American wine he had ever tasted; far better than the best Catawba, better than any foreign wine that he ever saw or put his lips to.

Mr. CRAINE thought that the Delaware was more prolific than even that splendid grape, the Diana, under the same treatment.

Mr. HOPKINS, of Tompkins County, had had considerable experience with the Delaware vines and fruit, last summer and last fall. The Delaware is now largely grown in New Jersey; and in every place where I have found it, it is valued very highly indeed—is valued above any grape they have ever seen. In the northern part of New Jersey, where the winters are as cold and as variable as they are here, and where gardeners do not give it the least kind of protection, the Delaware sustains itself better than the Isabella does under the same exposure. Judging from the fact that upon the higher grounds in the colder parts of New Jersey the Delaware vines have done so remarkably well, I assure cultivators that in Western New York it will do as well as any other grape-vine, and will produce as many pounds of fruit to the vine as any other kind can. Its sterling good qualities can be best realized from its being flatteringly called the *Italian wine grape*, by some natives of Italy who saw it in the grounds of Judge Provost, at Kingswood, New Jersey. It has one valuable quality, wherein it is different from any other of our native grapes, except the Diana; and that is, that as soon as it begins to be colored it is sweet, it is good.

Mr. MOODY here begged to remark, that in his experience the Diana had been fully as productive as the Delaware, and an early bearer also.

Mr. CRAINE repeated his opinion as to the Delaware. Vines this year had made canes twelve and fifteen feet in length; and he thought that a Delaware plant in its third year's growth, would bear more fruit under the same treatment than even the Diana. Mr. Craine admired both grapes very much, but thought it his duty to commend the Delaware as he had already done.

Mr. HOAG was in favor of having a regular succession of grapes, in about an equal proportion of the varieties, as much so as we have successions of any other fruit. If this be properly attended to, we can have and enjoy the luxury of the grape as long as we can the apple—for at least six months steady. Would speak of a variety called Garrigues, which ripens at least ten days earlier than Isabella. Has grown it side by side with Isabella; and Garrigues is more hardy; maturing its fruit early, while Isabella rots. Although the flavor or quality may not be quite equal to that of Isabella, still it is very hardy and exceedingly productive.

Mr. ELLWANGER.— As a rule, the grapes that ripen early are the kinds that keep best. A very great objection to the Isabella for wine is, that in the manufacture of Isabella wine we must add sugar. Mr. Longworth, of Cincinnati, whose name is so allied with the celebrated Catawba wine, said to Mr. Ellwanger that a sample of wine from the Delaware grape was the best wine he ever made; possessed more body, was a heavier wine and a better wine than any other that he had. From his experience with Delaware, Mr. Longworth liked it very well so far. About Cincinnati, the Delaware vine does not require manuring highly; but it requires deep culture of the soil, such culture as would produce good crops of corn. The reason for deep culture is, that if the land be with a clayey subsoil underlaid with limestone, and the clay be compact, the roots can not penetrate it, and the subsoil needs working up.

Mr. HOOKER approved of deep culture. In Monroe County, high manuring is not necessary to the successful growth of grapes. Too much manuring is done, too much stimulus is applied, and the ground not deep enough worked. Mr. Barry spoke of cultivators as all being too anxious to get fruit immediately, and to have it ripen up all at once. The ground for planting the vine should in all cases be thoroughly prepared; and deep working is one of the requisites. To be sure, the roots may go down into the cold subsoil; but we are not working for one year merely, but for a whole generation. People are too impatient for fruit from their plantings; they grumble because their pear-trees do not fruit soon after setting out; and the Northern Spy apple, which is now so popular and highly esteemed, used to be blamed for its late bearing. In planting the vine, they use in Europe at first no manure. They trench the ground and plant the vines, and afterward manure upon the surface of the ground. For a permanent vineyard, the land should be subsoiled at least twenty inches deep. While doing so, you do not necessarily throw the subsoil on the top of the other soil, but depending a good deal upon the character of the subsoil. If the land be worked deep, the roots of the vines are not so liable to be killed by the winters From the experience which fruit-growers have had during the twelve months past, we are more positive in regard to the qualities of grapes than we were a year ago.

Mr. MAXWELL, of Ontario County, spoke of Allen's Hybrid grape as a white fruit which, in a private garden in Geneva, had done very well, and promises well.

Mr. HOAG here spoke of the Logan, a very early black grape, and said that he should consider it a very good grape. Several members called on Mr. Bissell to state as to the Logan; and he remarked that untoward circumstances had prevented his fruiting the Logan this year, but that a quantity of the fruit was sent to him from Mr. Thomson, on 20th August; and all who ate it liked it very much.

Mr. ELLWANGER—When at Philadelphia lately had made inquiries of gentlemen from the West; and they did not express a very favorable opinion of it.

Mr. HOAG spoke of the To Kalon, which he would pronounce a better grape than the Isabella, especially for family use, for cultivation in gardens, &c.; and in this Mr. Hooker joined, pronouncing it a grape of fine quality, with a flavor truly delicious, and in size larger than the Isabella; the fruit when fine is very fine. The *Union Village* grape has created quite a sensation at the East, on account of its size.

Mr. ELLWANGER spoke of the Union Village from his own experience, having fruited it for the past two years; and in flavor it is fully as good as the Isabella, while the vine is perfectly hardy, and surely is among the varieties which are promising well.

D. W. BEADLE, of Canada, spoke of the Ontario grape; and some other sorts were mentioned; but the discussion consisted mainly of question and answer among the members, of which our reporter did not take accurate notes. We regret this the more as it was very interesting to those present, and would have been so to our readers.

The next meeting of the Society will be held in Rochester in January, when we hope to have an abstract of the proceedings sent to us.

